DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop S2-25-26
Baltimore, Maryland 21244-1850

State Demonstrations Group

June 18, 2024

Matt Ahern
Director of Medicaid and Long-Term Care
Nebraska Department of Health and Human Services
301 Centennial Mall South, 3rd Floor, PO Box 95026
Lincoln, NE 68509-5026

Dear Director Ahern:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Substance Use Disorder (SUD) Interim Evaluation Report, which is required by the Special Terms and Conditions (STCs), specifically STC #38 "Interim Evaluation Report" of the Nebraska section 1115 demonstration, "Substance Use Disorder Program" (Project No: 11-W-10025/7), effective through June 30, 2024. This Interim Evaluation Report covers the period from July 1, 2019 through June 30, 2022. CMS determined that the Evaluation Report, submitted on June 30, 2023 and revised on May 2, 2024, is in alignment with the CMS approved Evaluation Design and the requirements set forth in the STCs, and therefore, approves the state's SUD Interim Evaluation Report.

The Nebraska SUD section 1115 demonstration aimed to improve access to health care, quality of care, and reduce healthcare costs by implementing coverage and service delivery changes, as well as expanding coverage for beneficiaries with SUD. Utilizing a mixed methods approach, the Interim Evaluation Report provides a comprehensive assessment employing a wide array of data sources and measures. The overall results suggest the demonstration has made progress in delivering appropriate treatment for beneficiaries with SUD, increased the number of providers delivering SUD services, and reduced some measures of utilization (e.g., the average number of emergency visits) over the demonstration period. However, the analyses also showed room for improvement with some quality of care measures, such as overdose deaths and 30-day readmission rates. We look forward to further analysis of the SUD demonstration that will come as the state continues to refine the program.

In accordance with STC # 42, the approved Interim Evaluation Report may now be posted to the state's Medicaid website within 30 days. CMS will also post the Interim Evaluation Report on Medicaid.gov.

We look forward to our continued partnership on the Nebraska SUD section 1115 demonstration. If you have any questions, please contact your CMS demonstration team.

Sincerely,

Danielle Daly -S

Digitally signed by Danielle Daly -S
Date: 2024.06.18 11:30:37 -04'00'

Danielle Daly
Director
Division of Demonstration Monitoring and Evaluation

cc: Tyson Christensen, State Monitoring Lead, CMS Medicaid and CHIP Operations Group

State of Nebraska Department of Health and Human Services

Nebraska Substance Use Disorder (SUD) Demonstration Waiver

Interim Evaluation Report

April 2024

HSAG HEALTH SERVICES ADVISORY GROUP

Table of Contents

Executive Summary

The Nebraska Department of Health and Human Services (DHHS) Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) application was approved by the Centers for Medicare & Medicaid Services (CMS) on June 28, 2019, effective July 1, 2019, through June 30, 2024.[1] The Waiver allows DHHS to provide high-quality, clinically appropriate treatment to Medicaid enrollees 19 to 64 years of age primarily diagnosed with opioid use disorder (OUD) and/or other SUDs at Institutions for Mental Disease (IMDs). In addition to providing the appropriate level of care, the coverage of IMD stays reduces emergency department (ED) visits and increases referrals for outpatient (OP) and community-based services upon discharge. Additionally, the Waiver enables the State to implement models focused on increasing home-and-community-based support for beneficiaries and improve access to evidence-based SUD services based on the American Society of Addiction Medicine (ASAM) criteria. The Waiver was designed to support three aims:

- **Aim One**: Improve access to health care for beneficiaries with an SUD.
- **Aim Two**: Improve quality of care for beneficiaries with an SUD.
- **Aim Three**: Maintain or reduce costs.

Pursuant to the Special Terms and Conditions (STCs) of the Waiver, DHHS contracted with Health Services Advisory Group, Inc. (HSAG), as the independent evaluator to conduct a comprehensive evaluation of the Waiver. The purpose of the evaluation is to provide CMS and DHHS with an independent evaluation that ensures compliance with the requirements of Section 1115 Demonstration Waivers; assist in State and federal decision-making about the efficacy of the Waiver; and enable DHHS to further develop clinically appropriate, fiscally responsible, and effective Medicaid Section 1115 Demonstration Waivers. This is the Interim Evaluation Report for the Waiver. This report evaluates the first three years of the Waiver, July 1, 2019, through June 30, 2022. Following the conclusion of the Waiver in 2024, a Summative Evaluation Report will report an analysis of the full five-year demonstration period.

Conclusions

Aim One

Evaluation of this question was complicated by the coronavirus disease 2019 (COVID-19) public health emergency (PHE) and Medicaid expansion, two events that coincided with the initial implementation period of the Waiver, and close enough in time to the full implementation to preclude disentangling the effects of all events. The COVID-19 PHE impacted healthcare utilization as social distancing guidelines, mandated shut-downs, and stay-at-home orders were in effect. Medicaid expansion made it possible for people under the age of 65 who earn up to 138 percent of the federal poverty level (FPL) to receive Medicaid health insurance coverage. Expansion confounds assessment of the Waiver impact as increases in utilization could be a result of the large influx of members needing SUD services.

[1] Centers for Medicare & Medicaid Services. CMS Initial Approval. Available at: https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/ne/ne-substance-use-disorder/ne-sud-demo-initial-appvl-20190628.pdf. Accessed on: Mar. 1, 2023.

Successes and challenges associated with Aim One include the following.

Successes

Several measures indicated support for hypotheses that the Waiver would increase access to evidence-based SUD treatment reflected in increased utilization (Hypothesis 1) and increased capacity (Hypothesis 2):

- An increased percentage of beneficiaries with an SUD who received any SUD treatment service
- Improved rates of residential service utilization for an SUD
- An increased percentage of beneficiaries with an SUD who had a medication-assisted treatment (MAT) claim for an SUD
- An increasing number of Medicaid providers delivering SUD services

Following initial implementation of the Waiver that extended coverage to IMD stays of any duration, there were potential improvements in the average number of IMD stays for an SUD and average number of days of IMD treatment for an SUD among beneficiaries with an SUD. Additionally, the average length of stay (ALOS) of IMD stays for an SUD also stabilized around the statewide goal of 30 days. The number of beds available in IMD facilities providing SUD services also trended upward. However, due to the lack of pre-implementation data or a viable comparison group, these improvements cannot be attributed directly to the Waiver.

Several survey measures using data from the Substance Abuse and Mental Health Services Administration (SAMHSA), the National Survey on Drug Use and Health (NSDUH), and the National Survey of Substance Abuse Treatment Services (N-SSATS) also showed promise as rates trended in a desired direction. The treatment gap for beneficiaries with an illicit drug or substance use disorder is decreasing in Nebraska, although only pre-implementation data were available. There were slight improvements in the number of facilities providing any type of MAT per 100,000 adult Nebraskans. While the rate of facilities with opioid treatment programs (OTPs) per 100,000 adults in Nebraska remains lower than the national average, all Nebraska OTPs are being offered in OP facilities, and all OTPs are providing medication-assisted opioid therapy. However, no statistical testing was conducted as data for these measures were only available prior to the full implementation of the MAT/OTP component of the Waiver. As additional data points become available, HSAG will continue its assessment of these measures for the Summative Evaluation Report.

Challenges

There were some notable challenges to achieving Aim One:

- Reduced percentages of beneficiaries who use withdrawal management services following the full implementation of the Waiver and medically monitored inpatient withdrawal (MMIW) management service category.
- Lower rates of beneficiaries with an SUD who had an ambulatory or preventive care visit
- Zero residential (non-hospital) facilities offering OTPs

Evidence of decreasing percentages of beneficiaries who use withdrawal management services following full Waiver implementation in which coverage for MMIW became available may be indicative of a substitution effect; it is possible that the current measure does not capture treatment codes for the new services and that members are switching from existing withdrawal management services to more clinically appropriate MMIW services.

Alternatively, challenges that providers noted in providing these services (ASAM Level 3.7) may have temporarily impacted the provision of existing withdrawal management services.

The hypothesis that the Waiver will increase access to care for physical health conditions among beneficiaries with an SUD was not supported by increased utilization of ambulatory and preventive care; however, lower rates of preventive and primary care may be largely influenced by COVID-19 PHE impacts during 2020 and 2021.

The number of OP facilities offering detoxification per 100,000 adults in Nebraska and the number of facilities offering opioid-specific detoxification per 100,000 adults in Nebraska continues to fall below the national averages.

Aim Two

Successes

Through activities related to promoting evidence-based assessment and referral, standardizing assessment and placement criteria for patients, establishing qualifications for residential providers, and assuring compliance with treatment standards, the Waiver is hypothesized to improve the appropriateness and continuity of care for SUD beneficiaries. Several measures support the hypotheses:

- Increased rates of adherence to and retention in treatment for an SUD
- Reduction in the average number of ED visits for an SUD among beneficiaries with an SUD

Challenges

Key challenges were also present:

- An increasing trend in the rate of overall overdose deaths and opioid-specific overdose deaths in Nebraska from 2017 to 2020
- Increased rates of 30-day readmission for an SUD
- Decline in the percentage of beneficiaries initiating treatment within 14 days of a new SUD diagnosis

The increased rate of overdose deaths was exacerbated by the COVID-19 PHE, as was seen across the country during this time.[2] Compared to national rates, Nebraska experienced a greater increase in overdose deaths between 2019 and 2020; this may be explained by studies that show a disproportionate impact of the pandemic on drug use patterns among people living in rural areas.[3]

Although initiation of treatment for an SUD declined during this period, results on engagement in SUD treatment were mixed. The percentage of beneficiaries who initiated treatment and who had two or more additional services for an SUD within 34 days of the initiation visit improved during the initial implementation period, before worsening during the full implementation period.

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[2] Centers for Disease Control and Prevention. Overdose Deaths Accelerating During COVID-19. Available at: https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html. Accessed on: Mar. 7, 2023.

[3] Walters SM, Bolinski RS, Almirol E, et al (2022). "Structural and community changes during COVID-19 and their effects on overdose precursors among rural people who use drugs: a mixed-methods analysis," *Addiction Science & Clinical Practice* 17(24); Available at: https://ascpjournal.biomedcentral.com/articles/10.1186/s13722-022-00303-8. Accessed on: Mar. 17, 2023.

Aim Three

Aim Three focuses on cost maintenance as an intended outcome of treating patients in the most appropriate settings and asks whether the Waiver maintained or reduced total cost of care. It is hypothesized that the increased cost of SUD treatment as a result of higher utilization (increase in claims for treatment, longer IMD stays, etc.) will be balanced out by reduced acute care utilization. Thus, the Waiver is hypothesized to reduce inpatient (IP) hospitalization and ED use specifically for an SUD (Hypothesis 1) as well as overall hospital admissions and ED visits for beneficiaries with an SUD (Hypothesis 2) and ultimately result in maintained or reduced total cost of SUD-related care (Hypothesis 3) and overall total cost of care (Hypothesis 4).

Successes

There was strong evidence of a decrease in inpatient (IP) hospitalizations following implementation of the Waiver, as evidenced by:

- Reductions in the average number of IP hospitalizations and average number of days of IP hospitalization among all beneficiaries ages 19–64, for an SUD specifically.
- Reductions in the average number, average number of days and ALOS of IP hospitalization for any cause among beneficiaries with an SUD diagnosis.

Challenges

The ALOS of IP hospitalization for an SUD did not demonstrate any statistically significant results; therefore, did not support the hypothesis that the Waiver would reduce IP hospitalization and ED use for beneficiaries with an SUD. The average number of ED visits for any cause among beneficiaries with an SUD diagnosis demonstrated a relative decrease in the trend upon initial implementation and a relative increase in the trend upon full implementation. Therefore, this measure neither supported nor failed to support the hypothesis that the Waiver would reduce IP hospitalization and ED use or beneficiaries with an SUD.

In general, the results of the analysis on cost for SUD treatment supported the hypothesis that the Waiver would reduce or maintain total cost of SUD-related care (Hypothesis 3). A decrease in the average SUD-IMD cost at the start of each implementation period suggests trending of SUD-IMD costs in the desired direction, but the change in monthly trend during both implementation periods was not statistically significant. Similarly, there were no significant changes in the monthly cost trend for other SUD costs during either implementation period, and non-SUD costs demonstrated a significant relative decrease in the monthly cost trend during the initial implementation period, adding further support for the hypothesis of reducing or maintaining cost of SUD-related care.

Similarly, analysis of the total cost of care and costs stratified by category of service also supported the hypothesis that the Waiver would reduce or maintain total cost of care overall (Hypothesis 4). Specifically, ED and IP costs demonstrated continued cost reductions through the Waiver period; in particular, statistically significant decreasing monthly trends during the initial implementation period compared to projected costs had the baseline period continued suggest support for Hypothesis 4. Altogether, the results of the analysis of total costs among beneficiaries with an SUD demonstrated that costs were overall decreasing during the implementation period, with a significant relative decrease in the monthly trend following initial implementation of the Waiver, providing support for Hypothesis 4.

Overall Results

The findings demonstrate that beneficiaries increased utilization of SUD treatment services, particularly residential services, and MAT throughout the Waiver period. This increase may reflect the Waiver's emphasis on expanding residential providers' treatment methods and increasing the number of practitioners trained on MAT. Analysis of the number of Medicaid providers delivering SUD services showed an approximately 21 percent increase from the baseline years to 2022 and may reflect provider capacity building efforts.

The number of IMD stays and number of days of IMD treatment increased between the start of the initial implementation period and the start of the full implementation period in alignment with the Waiver's goals. There were also improvements in meeting the statewide target for ALOS in an IMD of 30 days; six out of the last eight months of the Waiver period were below 30 days and two months were only slightly above 30 days, indicating that the ALOS stabilized around the statewide goal of 30 days at the time of evaluation.

The evaluation showed a significant decrease in both the level and trend of ED visits for an SUD at the time of full implementation, suggesting evidence of the Waiver's impact on reducing ED utilization among beneficiaries with an SUD. As the full implementation of the Waiver effected increased availability of OTPs and more facilities providing MAT statewide, this decline may be representative of a shift away from reliance on EDs for SUD treatment. Decreasing ED costs during the initial implementation period lends additional support for reduced ED utilization by beneficiaries with an SUD.

The Waiver was also associated with improvements in IP stays for an SUD and IP stays for any cause. The average number of stays, average number of days and ALOS for an SUD specific and any-cause IP stays declined during the study period. Furthermore, examination of IP costs demonstrated a continued reduction in costs throughout the Waiver period.

Finally, pharmacy costs were increasing during the baseline period but began to decrease during the initial implementation period. Upon full implementation of the MAT/OTP services, pharmacy costs increased again as would be expected with wider accessibility of MAT treatment.

Lessons Learned and Recommendations

While the Waiver shows promise across several dimensions of care and improvements, there are some lessons learned and recommendations related to the provision of new services stemming from key informant interviews.

- **Issue**: Some providers noted difficulties in providing ASAM Level 3.7 MMIW management services.
  - **Recommendation**: The State should continue working with managed care organizations (MCOs) and providers to streamline or expedite the credentialling process. The State could also reiterate to providers that there are no changes to the provision or billing of existing services to reduce any confusion or uncertainty providers may have regarding billing State plan services.
- **Issue**: Some providers felt uncomfortable prescribing methadone treatment.
  - **Recommendation**: The State and/or MCOs could assist providers in prescribing methadone treatment, including providing clinical guidelines and recommendations. MCOs could facilitate collaboration among providers and existing methadone treatment facilities to address providers' concerns about lack of experience providing methadone treatment.

1. Background

Section 1115 of the Social Security Act provides states an opportunity to design and test methods for providing and funding healthcare services that meet the objectives of the federal Medicaid program and Children's Health Insurance Program (CHIP) but differ from services required by federal statute through Section 1115 Demonstration Waivers. Section 1115 Demonstration Waivers allow states flexibility in how healthcare is provided within the state, within federal guidelines. The Centers for Medicare & Medicaid Services (CMS) has designed a national evaluation strategy to ensure that demonstrations meet program objectives and to inform Medicaid policy in the future.

CMS approved the Nebraska Department of Health and Human Services (DHHS) Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) on June 28, 2019, with a demonstration period of July 1, 2019, through June 30, 2024. The following section outlines the history, guidance, and application of the Waiver including the goals of the Waiver, evaluation activities and timeline, and the demographics of the beneficiaries impacted in accordance with the Special Terms and Conditions (STCs).[1-1]

Historical Background of the Nebraska Substance Use Disorder Waiver

The public health crisis caused by the abuse of prescription and illicit opioids adversely impacted the quality of life of individuals across the United States, including those residing in Nebraska. According to the 2020 Nebraska Behavioral Risk Factor Surveillance System (BRFSS), 2.9 percent of Nebraska adults 18 years of age or older misused opioids in 2020.[1-2] Based on data collected by the Centers for Disease Control and Prevention (CDC), the drug overdose rate in Nebraska was 6.9 to 11 overdoses per 100,000 people in 2020.[1-3] Data collected by substance abuse treatment Centers (SATCs) in Nebraska identified alcohol and methamphetamines as the most predominantly used substances in 2016.[1-4]

DHHS took steps to address the SUD and opioid use disorder (OUD) needs of its Medicaid population. Prior to the Waiver, Nebraska Medicaid provided a range of SUD services at multiple levels of care, including outpatient (OP), intensive outpatient (IOP), withdrawal management, peer support, and clinically managed residential services. The State integrated physical health, behavioral health, and substance use treatment services provided to enrollees and launched several OUD initiatives. These OUD initiatives included publishing the Pain Management Guidance document to serve as a resource to providers treating chronic and acute pain, removing barriers to the administration of naloxone in State law, developing free field guides for the safe handling of opioids for Nebraska

1-1 Centers for Medicare & Medicaid Services. CMS Initial Approval. Available at: https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/ne/ne-substance-use-disorder/ne-sud-demo-initial-appvl-20190628.pdf. Accessed on: Mar. 16, 2023.

1-2 Nebraska Department of Health and Human Services. Nebraska Public Health Atlas. Available at: https://atlas-dhhs.ne.gov/Atlas/BRFSS. Accessed on: Mar. 16, 2023.

1-3 Centers for Disease Control and Prevention. 2020 Drug Overdose Death Rates. Available at: https://www.cdc.gov/drugoverdose/deaths/2020.html. Accessed on: Mar. 16, 2023.

1-4 Nebraska Department of Health and Human Services. State Initial Application. Available at: ne-sud-demo-pa.pdf (medicaid.gov). Accessed on: Mar. 16, 2023.

State Patrol, expanding provider education for medication-assisted treatment (MAT), developing the Prescription Drug Monitoring Program (PDMP), and hosting prescription drug takebacks.[1-5]

On January 1, 2017, DHHS launched the Heritage Health managed care program to integrate physical health, behavioral health, and pharmacy services for Medicaid enrollees into a single statewide, comprehensive delivery system. As a part of this program, DHHS sought to continue using facilities that qualify as Institutions for Mental Disease (IMD) to provide residential SUD treatment services to enrollees 21 to 64 years of age and include IMD stays in the development of capitation rates. The Medicaid and CHIP Managed Care Final Rule, implemented by CMS on July 5, 2016, limited capitated payments to short-term IMD stays of 15 or fewer days for residential SUD treatment. DHHS submitted a Section 1115 SUD Demonstration Waiver application on November 27, 2018, to gain the authority to continue making capitated payments for SUD treatment services received at IMDs, regardless of the average length of stay (ALOS).[1-6]

Background of the Waiver

On June 28, 2019, CMS approved DHHS' request to implement the Waiver for a five-year period from July 1, 2019, through June 30, 2024.[1-7] The Waiver authorizes the State to provide high-quality, clinically appropriate treatment to Medicaid enrollees 19 to 64 years of age primarily diagnosed with OUD and/or other SUDs at IMDs. In addition to providing the appropriate level of care, the coverage of IMD stays reduces emergency department (ED) visits and increases referrals for OP and community-based services upon discharge. Additionally, the Waiver enables the State to implement models focused on increasing home-and-community-based support for beneficiaries and improve access to evidence-based SUD services based on the American Society of Addiction Medicine (ASAM) criteria.

The Waiver seeks to achieve six primary goals to enable the State to provide a full continuum of care for Nebraskans with an SUD, presented in Figure 1-1.

1-5 Nebraska Department of Health and Human Services. Nebraska Coalition to Prevent Opioid Abuse. Available at: https://ago.nebraska.gov/sites/ago.nebraska.gov/files/doc/Strategic%20Initiatives%20Update%202020.pdf. Accessed on: Mar. 16, 2023.

1-6 Centers for Medicare & Medicaid Services. Initial Application. Available at: https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/ne/ne-sud-demo-pa.pdf. Accessed on: Mar. 16, 2023.

1-7 Centers for Medicare & Medicaid Services. Initial Approval. Available at: https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/ne/ne-substance-use-disorder/ne-sud-demo-initial-appvl-20190628.pdf. Accessed on: Mar. 16, 2023.

Figure 1-1—Goals of the Waiver

Goal 1	Increased rates of identification, initiation, and engagement in treatment for SUD
Goal 2	Increased adherence to and retention in treatment
Goal 3	Reductions in overdose deaths, particularly those due to opioids
Goal 4	Reduced utilization of EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services
Goal 5	Fewer readmissions to the same or higher level of care where readmission is preventable or medically inappropriate
Goal 6	Improved access among beneficiaries with SUD

The Waiver aims to achieve these goals by improving access to evidence-based SUD treatment and improving the quality of available SUD treatment. The Waiver seeks to increase access to IMD stays, medically monitored inpatient withdrawal (MMIW) services, and MAT for beneficiaries with OUD.

Implementation of the Waiver

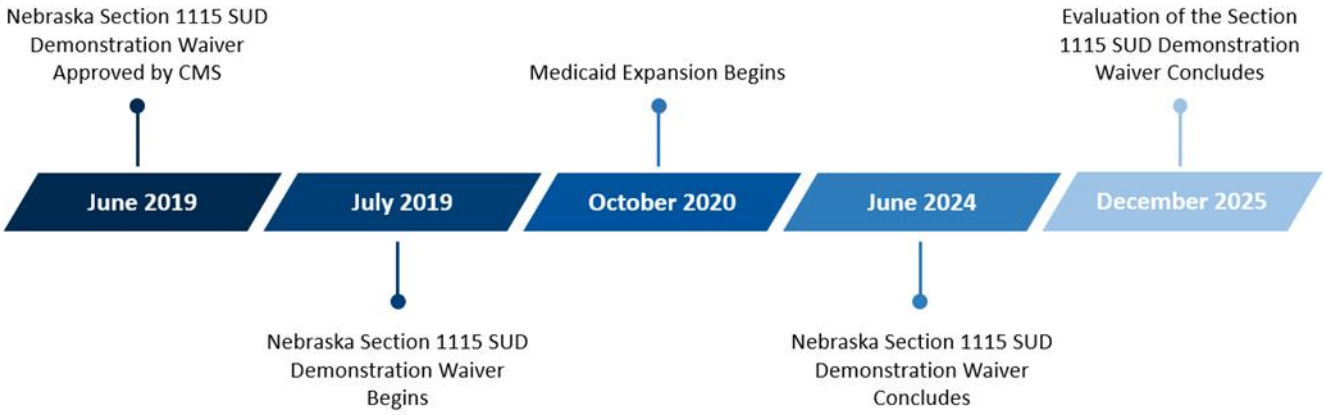
CMS approved the Waiver implementation plan on July 9, 2019.[1-8] The implementation plan outlined the State's strategy to implement each of the six CMS SUD milestones:

- **Milestone 1**: Access to critical levels of care for OUD and other SUDs
- **Milestone 2**: Widespread use of evidence-based, SUD-specific patient placement criteria
- **Milestone 3**: Use of nationally recognized, evidence-based, SUD program standards to set residential treatment provider qualifications
- **Milestone 4**: Sufficient provider capacity at each level of care, including MAT
- **Milestone 5**: Implementation of comprehensive treatment and prevention strategies to address opioid abuse and OUD
- **Milestone 6**: Improved care coordination and transitions between levels of care

Figure 1-2 displays a timeline of the key demonstration milestones for the Waiver.

[1-8] Centers for Medicare & Medicaid Services. CMS Approval – SUD Implementation Plan. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-appvd-sud-implementation-plan-20190709.pdf. Accessed on: Mar. 16, 2023.

Figure 1-2—Timeline of Key Demonstration Events



Due to the coronavirus disease 2019 (COVID-19) public health emergency (PHE), Nebraska's Waiver experienced delays in the implementation of some action items outlined in the implementation plan. Of particular significance, the roll outs of service delivery for opioid treatment programs (OTPs) and MMIW were delayed from an anticipated start on October 1, 2020, to June 1, 2021. In addition to the delayed implementation of the demonstration components, DHHS reported delays in updating managed care organization (MCO) contract language to:

- Reflect the specific requirement for utilization management and level of care assessments
- Require provider education regarding the requirements to facilitate MAT
- Require reviews of residential treatment providers to ensure the types of services, hours of clinical care, and credentials for staff for residential treatment settings are compliant with ASAM criteria
- Reflect specific requirements for care management follow-up after SUD treatment discharge

While the COVID-19 PHE caused delays in the implementation of these specific action items, the State anticipated a completion date of January 1, 2023. On March 31, 2023, DHHS publicly posted updates encompassing a complete review of specific language components as a part of the larger effort to reconcile and combine SUD and behavioral health service definitions and regulations in the State. DHHS also reported conducting current state analyses across three different areas while progressing toward completion of the delayed action items. First, DHHS reviewed MCO policies, procedures, and contract language detailing guidance on program standards in the ASAM criteria. Second, DHHS reviewed the current State Division of Public Health (DPH) standards regarding Medicaid and Long-Term Care (MLTC) provider screening and enrollment compliance standards and MCO processes for auditing providers to ensure compliance with these standards. Third, DHHS performed an analysis of the current MCO best practices for care and treatment coordination, identifying a widespread model for providing whole person care (WPC), and the role of Integrated Health and Social Services (IHSS) in care transitions as well as best practices for linking beneficiaries in residential facilities to community-based services and supports.

Heritage Health Adult Expansion Program

Effective October 1, 2020, DHHS expanded Medicaid eligibility to individuals 19 to 64 years of age whose income is at or below 138 percent of the federal poverty level (FPL) through its Heritage Health Adult (HHA)

expansion program. As of December 1, 2021, more than 55,000 newly eligible Nebraskans had enrolled in HHA.[1-9] HHA expansion occurred 15 months following the approved implementation date of the Waiver and coincided with the addition of MMIW and OTP services. Therefore, the impact of these HHA expansion elements must be considered when assessing the Waiver, as they were expected to increase the number of Medicaid members, members with an SUD diagnosis, and members accessing SUD services.

Amendments

On May 29, 2020, DHHS submitted an amendment requesting the authorization of federal Medicaid financial participation (FPP) for the coverage of SUD treatment-related inpatient (IP) stays in IMDs for the Medicaid expansion population covered under HHA.[1-10] The amendment would ensure that Medicaid beneficiaries eligible under the adult expansion category with an SUD would be able to receive treatment in an appropriate, cost-effective setting. DHHS requested an effective date of October 1, 2020, for the amendment to directly coincide with the start of the HHA expansion program. On September 1, 2020, CMS replied to the request notifying DHHS that an amendment was not required in order to add the new adult group to the demonstration population.[1-11]

On November 12, 2021, DHHS submitted the Managed Care Risk Mitigation COVID-19 PHE Section 1115 Demonstration application. On January 18, 2022, CMS approved the application as an amendment under the Waiver.[1-12] The amendment tests whether, in context of the COVID-19 PHE, an exemption from the regulatory prohibition in 42 Code of Federal Regulations (CFR) § 438.6(b)(1) promotes the objectives of Medicaid. This exemption allows states to enter into or modify a risk modification arrangement with an MCO after the applicable rating period has begun, and expects to support states in making appropriate, equitable payments during the PHE to aid in maintaining beneficiaries' access to care. This amendment had no impact on the Waiver's implementation or resulting data.

Demographics

The target population for the Waiver is all Medicaid beneficiaries 19 to 64 years of age. The HHA Medicaid expansion group consists of individuals 19 to 64 years of age whose income is at or below 138 percent of the FPL.

Figure 1-3 demonstrates monthly Waiver population enrollment from state fiscal year (SFY) 2017–2022. Enrollment among the Waiver population was stable prior to 2020 until the COVID-19 PHE began in March 2020. From March 2020 to October 2020, when the HHA program expanded Medicaid coverage, enrollment

1-9 Nebraska Department of Health and Human Services. Nebraska Medicaid Annual Report State Fiscal Year 2021. Available at: https://nebraskalegislature.gov/FloorDocs/107/PDF/Agencies/Health_and_Human_Services__Department_of/107_20211130-091110.pdf. Accessed on: Mar. 16, 2022.

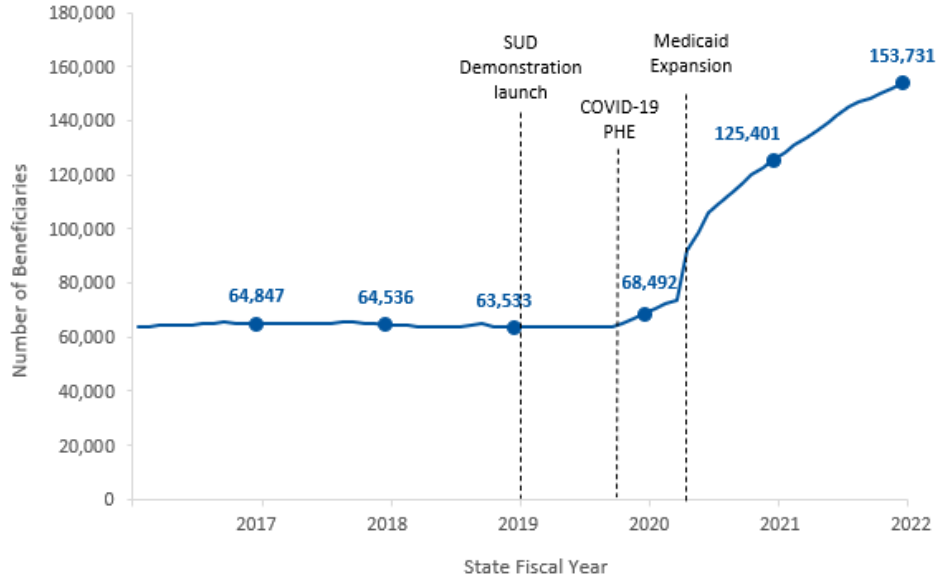
1-10 Centers for Medicare & Medicaid Services. Amendment Request – Addition of Adult Expansion Category. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-pa2.pdf. Accessed on: Mar. 16, 2022.

1-11 Centers for Medicare & Medicaid Services. CMS Amendment Update – New Adult Group. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-amend-update-new-adult-group-09012020.pdf. Accessed on: Mar. 16, 2022.

1-12 Centers for Medicare & Medicaid Services. Risk Mitigation Approval. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-risk-mitigation-appvl-01182022.pdf. Accessed on: Mar. 16, 2022.

increased 43 percent from 63,888 beneficiaries to 91,728 beneficiaries, respectively. Following Medicaid expansion, enrollment continued to increase, reaching a peak of 153,731 members at the end of SFY 2022.

Figure 1-3—Total Monthly Waiver Population, SFY 2017–2022



Note: Data labels denote total Medicaid enrollment at the end of the SFY (June 30)

Figure 1-4 shows that from SFY 2017–2020, approximately half of Waiver beneficiaries were enrolled for a full 12 months in each year, and one quarter of Waiver beneficiaries had fewer than six months of Medicaid enrollment. In SFY 2021, the percentage of Waiver beneficiaries enrolled in Medicaid for a full 12 months and fewer than six months decreased to 48 percent and 19 percent, respectively. The percentage of Waiver beneficiaries enrolled for the full year reached a peak of 69 percent in SFY 2022, while the percentage of beneficiaries enrolled in Medicaid for less than six months decreased to a low of 13 percent. This increase in continuous enrollment is likely due to the federally mandated Medicaid continuous coverage protection through the COVID-19 PHE.[1-13]

[1-13] Kaiser Family Foundation. The Families First Coronavirus Response Act: Summary of Key Provisions. Available at https://www.kff.org/global-health-policy/issue-brief/the-families-first-coronavirus-response-act-summary-of-key-provisions/. Accessed on Mar. 16, 2023.

Figure 1-4—Duration of Medicaid Enrollment Among Waiver Beneficiaries, SFY 2017–2022

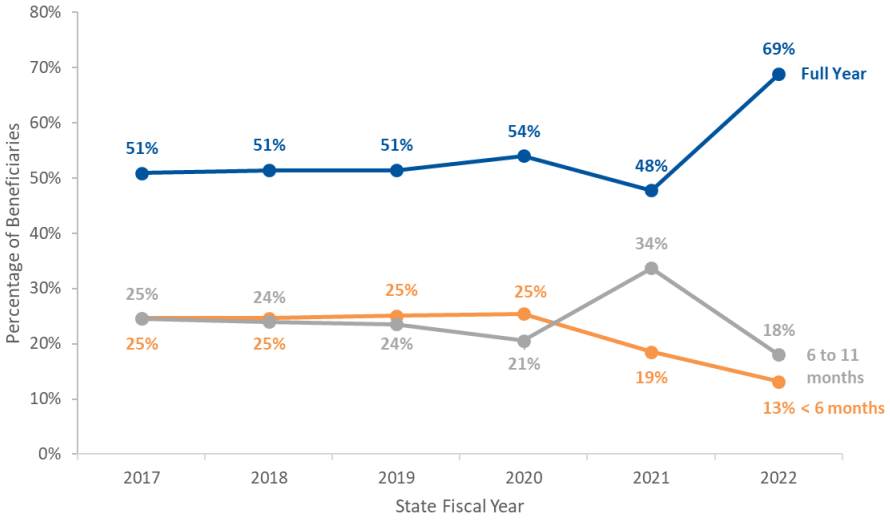
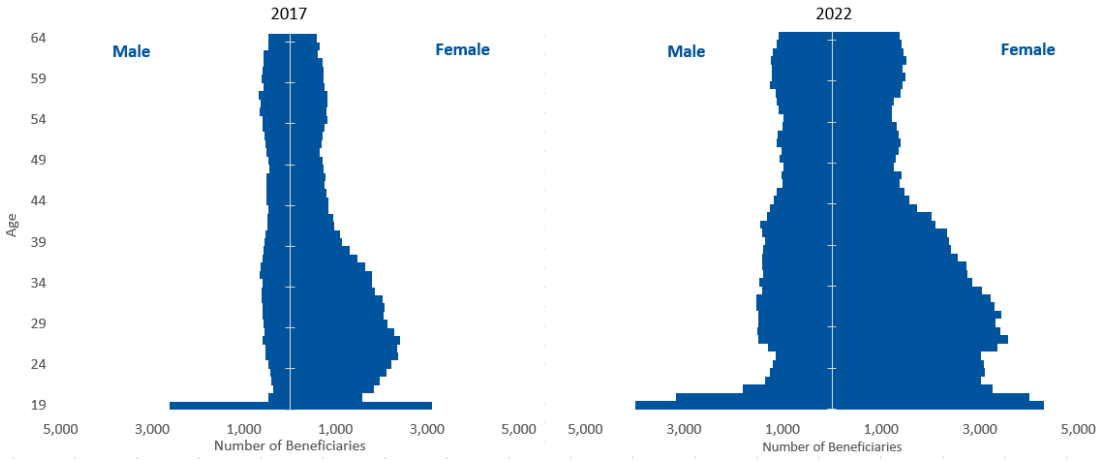


Figure 1-5 illustrates the changes in the age and gender distribution of Waiver beneficiaries between pre-Medicaid expansion in SFY 2017 and SFY 2022 following Medicaid expansion and the COVID-19 PHE. The majority of enrolled Waiver beneficiaries during both periods were women ages 19–39, making up 68 percent of Waiver beneficiaries prior to the Medicaid expansion and 64 percent of Waiver beneficiaries following the expansion. For other age groups, the distributions of men and women were similar pre-expansion and post-expansion.

Figure 1-5—Age Distribution by Gender of the Waiver Population, SFY 2017 and 2022



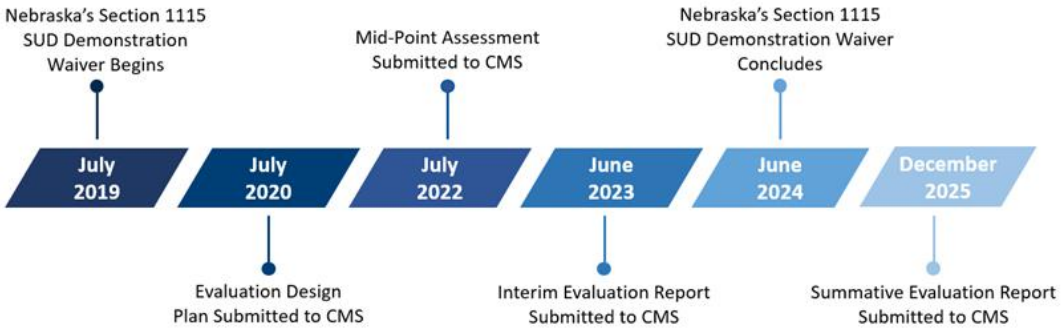
Evaluation Activities

In accordance with the STCs, DHHS contracted with an independent evaluator, Health Services Advisory Group, Inc. (HSAG), to conduct a comprehensive evaluation of the Waiver.[1-14] The goal of the evaluation is to provide the State and CMS a thorough, independent evaluation of the Waiver in order to estimate the impacts of the program and provide recommendations to improve program efficacy. Key evaluation activities include:

- **Evaluation Design**—The State's plan for how the evaluation of the Waiver will be conducted. The evaluation design presents the goals of the demonstration, the evaluation questions and hypothesis, and the methodologies that will be utilized to determine the extent to which the demonstration has achieved its stated goals. The evaluation design for the Waiver was developed by Public Consulting Group and approved by CMS on August 28, 2020.[1-15]
- **Mid-Point Assessment (MPA)**—The report outlined the status of the implementation process of the Waiver. The report examined the progress toward each demonstration milestone outlined in the implementation plan, identified any risks to meeting those milestones, and provided recommendations for improving the demonstration. The MPA was developed by HSAG and submitted to CMS on July 1, 2022.
- **Interim Evaluation Report**—This report discusses the evaluation progress and findings for the Waiver from July 1, 2019, through June 30, 2022. The report includes the background and goals of the demonstration, the hypotheses and evaluation questions the demonstration addresses, and the methodology of analyses. The report provides interpretations of analyses, discussion of the implications, assessment of outcomes, and recommendations to the State for the remainder of the demonstration period.
- **Summative Evaluation Report**—The report will follow the same structure as the Interim Evaluation Report, and will evaluate the entire demonstration period from July 1, 2019, through June 30, 2024.

Figure 1-6 displays the timeline of the evaluation activities.

Figure 1-6—Timeline of Evaluation Activities



1-14 Centers for Medicare & Medicaid Services. CMS Initial Approval. Available at: https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/ne/ne-substance-use-disorder/ne-sud-demo-initial-appvl-20190628.pdf. Accessed on: Mar. 17, 2023.

1-15 Centers for Medicare & Medicaid Services. CMS SUD Evaluation Design Approval. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-appvd-sud-eval-dsgn-20200828.pdf. Accessed on: Mar. 17, 2023.

2. Evaluation Questions and Hypotheses

The primary purpose of the interim evaluation is to determine whether Nebraska's Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) is achieving the six goals outlined in the Background section. This section provides the program's logic models, hypotheses, and research questions, which focus on evaluating the impact of the Waiver on these goals.

Demonstration Goals

The Waiver supports improvements to achieve six primary goals set by the Centers for Medicare & Medicaid Services (CMS) (cited earlier in this report):

1. Increased rates of identification, initiation, and engagement in treatment for SUD.
2. Increased adherence to and retention in treatment.
3. Reduction in overdose deaths, particularly those due to opioids.
4. Reduced utilization of emergency departments (EDs) and inpatient (IP) hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services.
5. Fewer readmissions to the same or higher level of care where readmission is preventable or medically inappropriate.
6. Improved access among beneficiaries with an SUD.

These goals are consistent with the six implementation milestones for SUD provided by CMS.

- **CMS Milestone 1**: Access to critical levels of care for opioid use disorder (OUD) and other SUDs.
- **CMS Milestone 2**: Widespread use of evidence-based, SUD-specific patient placement criteria.
- **CMS Milestone 3**: Use of nationally recognized, evidence-based, SUD program standards to set residential treatment provider qualifications.
- **CMS Milestone 4**: Sufficient provider capacity at each level of care, including medication-assisted treatment (MAT).
- **CMS Milestone 5**: Implementation of comprehensive treatment and prevention strategies to address opioid abuse and OUD.
- **CMS Milestone 6**: Improved care coordination and transitions between levels of care.

To accomplish these goals, the Waiver includes key data-driven activities and interventions to improve access to evidence-based SUD treatment and improve the quality of evidence-based SUD treatment.

Hypotheses and Research Questions

Three aims and their corresponding evaluation questions led to the development of 12 hypotheses, each of which was identified to comprehensively evaluate the goals of the Waiver. The three aims of the Waiver are:

1. Improve access to health care for beneficiaries with an SUD
2. Improve quality of care for beneficiaries with an SUD
3. Maintain or reduce costs

Hypotheses were developed based on the potential for improvement, the ability to measure performance, and the use of comparison groups to isolate the effects of the demonstration and interventions. The hypotheses and evaluation questions are presented below with the program aims they were designed to evaluate.

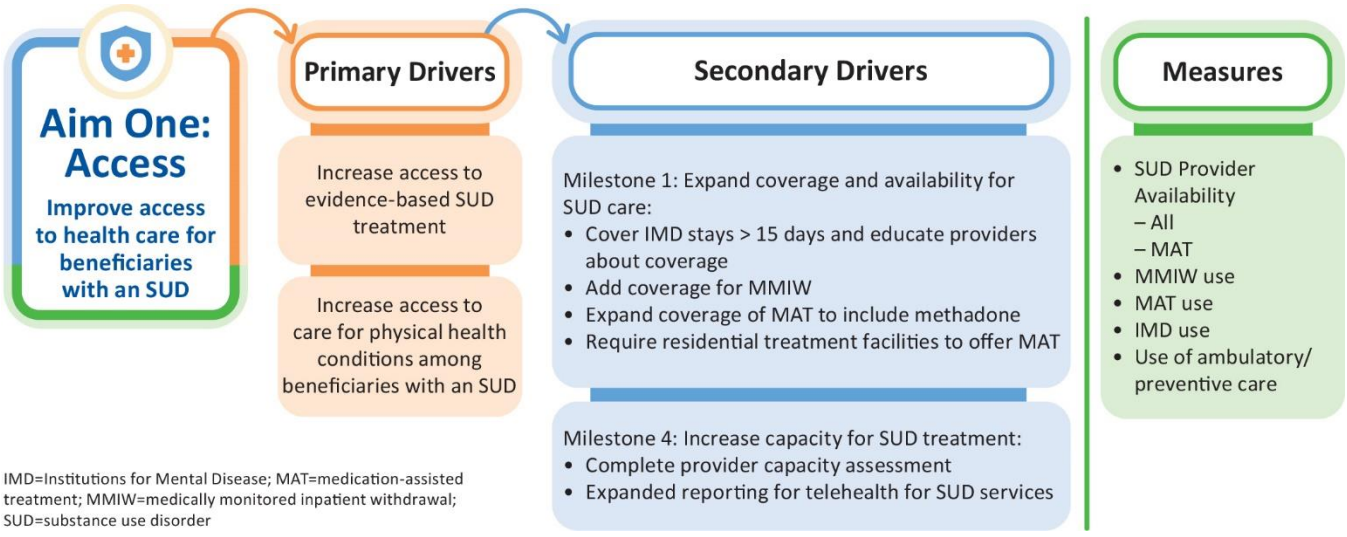
Aim One: Improve Access to Health Care for Beneficiaries with an SUD

Logic Model

In Aim One, the Waiver targets expanding coverage and capacity for SUD treatment. The evaluation design outlines a logic model that relates the goals of CMS and the Waiver to the primary drivers that contribute to achieving the goals, the secondary drivers necessary to achieve the primary drivers, and the measures.

Figure 2-1 illustrates the logic model for Aim One.

Figure 2-1—Aim One Logic Model



IMD=Institutions for Mental Disease; MAT=medication-assisted treatment; MMIW=medically monitored inpatient withdrawal; SUD=substance use disorder

Hypotheses and Evaluation Question

The hypotheses and evaluation question for Aim One are presented in Table 2-1.

Table 2-1—Aim One Evaluation Question and Hypotheses

Evaluation Question	Hypotheses
Did the demonstration improve access to healthcare for beneficiaries with an SUD?	The demonstration will increase access to evidence-based SUD treatment, reflected in increased utilization. The demonstration will increase access to evidence-based SUD treatment, reflected in increased capacity. The demonstration will increase access to care for physical health conditions among beneficiaries with an SUD.

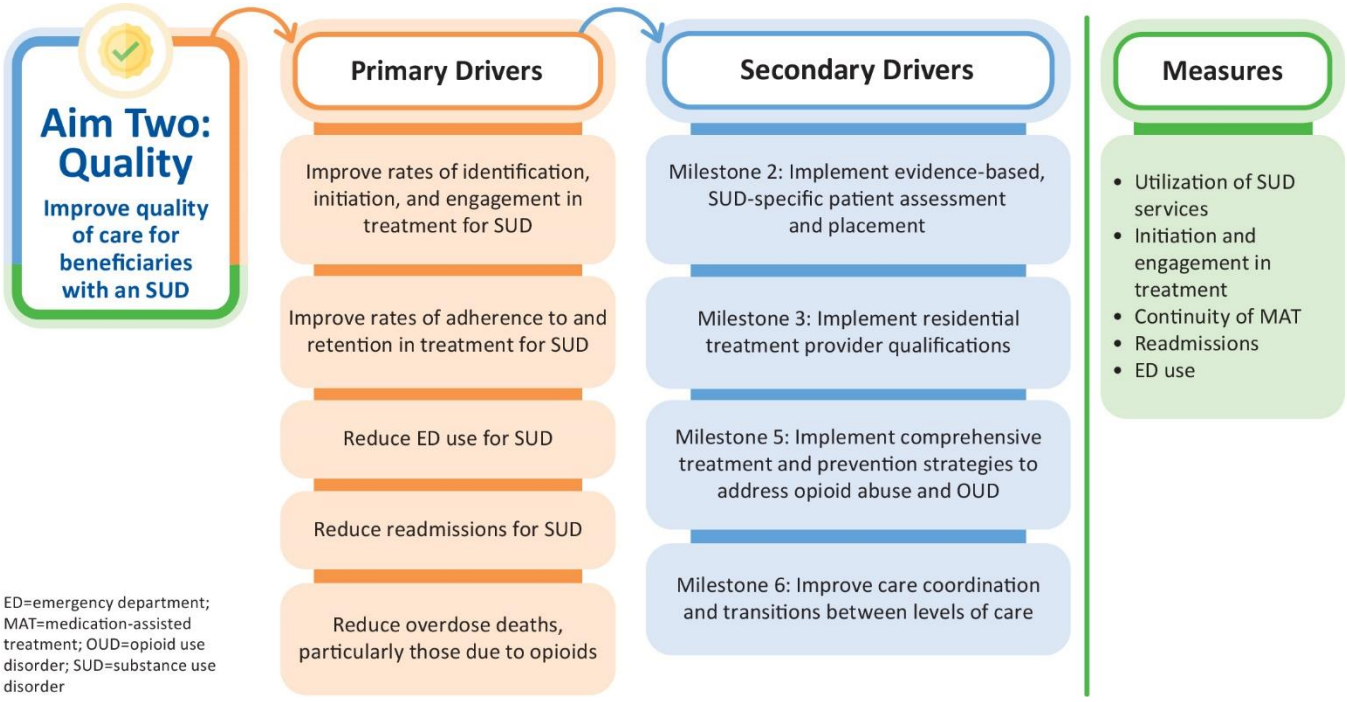
Aim Two: Improve Quality of Care for Beneficiaries with an SUD

Logic Model

Aim Two seeks to improve quality as a result of implementing several waiver components and expanding coverage. The evaluation design outlines a logic model that relates the goals of CMS and the Waiver to the primary drivers that contribute to achieving the goals, the secondary drivers necessary to achieve the primary drivers, and the measures.

Figure 2-2 illustrates the logic model for Aim Two.

Figure 2-2—Aim Two Logic Model



Hypotheses and Evaluation Question

The hypotheses and evaluation question for Aim Two are presented in Table 2-2.

Table 2-2—Aim Two Evaluation Question and Hypotheses

Evaluation Question	Hypotheses
Did the demonstration improve the quality of SUD treatment?	The demonstration will improve rates of identification, initiation, and engagement, in treatment for SUD. The demonstration will improve rates of adherence to and retention in treatment for SUD. The demonstration will reduce ED use for SUD. The demonstration will reduce readmissions for SUD. The demonstration will reduce overdose deaths, particularly those due to opioids.

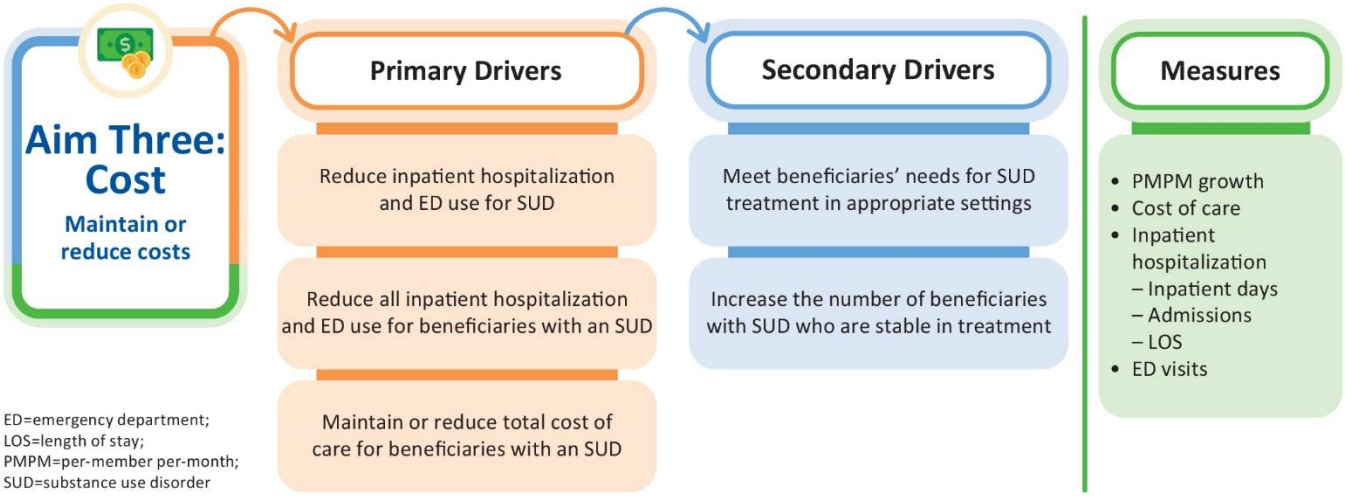
Aim Three: Maintain or Reduce Costs

Logic Model

In Aim Three, cost maintenance is an intended outcome of treating patients in the most appropriate setting and improving follow-up. The evaluation design outlines a logic model that relates the goals of CMS and the Waiver to the primary drivers that contribute to achieving the goals, the secondary drivers necessary to achieve the primary drivers, and the measures.

Figure 2-3 illustrates the logic model for Aim Three.

Figure 2-3—Aim Three Logic Model



Hypotheses and Evaluation Question

The hypotheses and evaluation question for Aim Three are presented in Table 2-3.

Table 2-3—Aim Three Evaluation Question and Hypotheses

Evaluation Question	Hypotheses
Did the demonstration maintain or reduce total cost of care?	The demonstration will reduce inpatient hospitalization and ED use for an SUD. The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with an SUD. The demonstration will reduce or maintain total cost of SUD-related care. The demonstration will reduce or maintain total cost of care.

3. Methodology

The primary goal of an impact assessment in policy and program evaluation is to establish causal relationship between the introduction of a policy or program and related outcomes. To accomplish this, a comparison of outcomes between the intervention group and a valid counterfactual—the intervention group had its members not been exposed to the intervention—must be made. The gold standard for experimental design is a randomized controlled trial, which would be implemented by first identifying an intervention population, and then randomly assigning individuals to the intervention and the rest to a control group, which would serve as the counterfactual. However, random assignment is rarely feasible in practice, particularly as it relates to healthcare policies.

As such, a variety of quasi-experimental or observational methodologies have been developed for evaluating the effect of policies on outcomes. The research questions presented in the previous section will be addressed through at least one of these methodologies. The selected methodology largely depends on data availability factors relating to (1) data to measure the outcomes, (2) data for a valid comparison group, and (3) data collection during the time periods of interest—typically defined as one or two years prior to implementation and annually thereafter. Table 3-1 illustrates a list of analytic approaches that will be used as part of the evaluation and whether the approach requires data gathered at the baseline (i.e., pre-implementation) or allows for causal inference to be drawn. It also notes key requirements unique to a particular approach.

Table 3-1—Analytic Approaches

Analytic Approach	Baseline Data	Allows Causal Inference	Notes
Interrupted time series	✓	✓	Requires sufficient data points prior to and following implementation
Trend analysis	✓		Requires multiple baseline data points
Descriptive time series analysis			Relies on descriptive interpretation; does not involve statistical testing

Evaluation Design Summary

The interim evaluation of the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) utilized a mixed-methods evaluation design.[3-1] The Centers for Medicare & Medicaid Services (CMS)-approved evaluation design of the Waiver can be found in Appendix B. Quantitative methods included descriptive statistics showing change over time in both counts and rates for specific metrics, or interrupted time series (ITS) and trend analysis to assess whether the waiver interventions effected changes across specific outcome measures. A valid comparison group could not be used because data were unavailable for a comparable population not targeted by the intervention. Additionally, out-of-state Medicaid data through the Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF) were not available or viable at the time of

[3-1] Centers for Medicare & Medicaid Services. CMS SUD Evaluation Design Approval. Available at: ne-sud-demo-appvd-sud-eval-dsgn-20200828.pdf (medicaid.gov). Accessed on: Mar. 17, 2023.

evaluation for the Interim Evaluation Report. T-MSIS data from other states may be viable for the Summative Evaluation Report, but only covering a limited period of the demonstration due to the two-to-three-year data lag.

A qualitative component of the Waiver was also completed. Providers, staff at the Nebraska Department of Health and Human Services (DHHS), and managed care organizations (MCOs) were interviewed to share their perceptions of and experience with the Waiver.

Target and Comparison Populations

The Waiver targeted adult Medicaid beneficiaries ages 19–64 with an SUD diagnosis. The target population included those who became eligible for Medicaid as a result of the Heritage Health Adult (HHA) expansion that began on October 1, 2020. In accordance with the CMS-approved evaluation design, adults older than 65 years of age were excluded from evaluation as Medicaid is rarely the primary payer for this group.[3-2] Adolescents under age 19 have the ability to access the services provided by the Waiver, however, they are not specifically targeted and were not included in analyses.

Because all Medicaid beneficiaries are eligible for services under the Waiver, no true in-state comparison population is available for this demonstration. As such, the ITS approach will compare post-waiver trends to pre-waiver trends. Where appropriate, comparisons of statewide outcomes to national trends will be made but are not considered a true counterfactual.

Evaluation Period

The formal launch date of the Waiver was July 9, 2019. The evaluation design for the Interim Evaluation Report defines the pre-implementation baseline period as July 9, 2017–July 8, 2019. However, to better align measure calculations with the most common baseline period in the monitoring metrics specifications, the measurement periods were adjusted to align with the state fiscal year (SFY) (i.e., July 1–June 30). As such, the pre-implementation baseline period and post-implementation period for the Interim Evaluation Report evaluation are defined as July 1, 2017–June 30, 2019, and July 1, 2019–June 30, 2022, respectively (Table 3-2).

Table 3-2—Evaluation Time Periods

Pre-implementation	Post-Implementation
July 1, 2017–June 30, 2019	July 1, 2019–June 30, 2022

However, implementation of the Waiver occurred at two primary points in time. Prior to the Waiver, coverage of Institutions for Mental Disease (IMD) stays less than 15 days had been available under an "in-lieu of service" authority. When the Waiver launched in July 2019, the Section 1115 authority allowed for Medicaid to begin covering SUD services in IMDs for durations greater than 15 days. DHHS anticipated being ready to offer additional new services under the Waiver (i.e., medically monitored inpatient withdrawal [MMIW] management and medication-assisted treatment/opioid treatment programs [MAT/OTP]) by October 2020 after a ramp-up period; however, the coronavirus disease 2019 (COVID-19) public health emergency (PHE) led to a delay in implementation of these services until June 2021.

3-2 Ibid

The phased approach of the Waiver implementation as well as the use of monthly measures for this evaluation allows for further refinement of the periods considered in the analysis. Thus, Health Services Advisory Group, Inc. (HSAG) considered three separate periods in the analysis, as presented in Table 3-3.

Table 3-3—Analytic Time Periods

Time Period	Dates	Description
Pre-implementation	July 1, 2017–June 30, 2019	Pre-implementation/Baseline
Initial implementation	July 1, 2019–May 31, 2021	IMD stays > 15 days covered
Full implementation	June 1, 2021–June 30, 2022	IMD stays > 15 days covered MMIW and MAT/OTP coverage

The COVID-19 PHE likely had substantial impacts on the healthcare system through social distancing measures, stay-at-home orders, and mandated shutdowns, which ultimately is expected to impact performance measure rates. Similarly, Medicaid expansion in October 2020 led to an influx of new beneficiaries and broader changes to the system that may have altered the impact of the Waiver. As such, the confounding impacts of both the COVID-19 PHE and Medicaid expansion were controlled for in the analysis and are described in detail in the Analytic Methods section.

Evaluation Measures

The evaluation measures were based on data sources that provided valid and reliable data which were readily available throughout the Waiver and evaluation activities. HSAG reviewed the quality and completeness of each data source to determine whether the data used were complete and accurate. As often as possible, measures in the evaluation were selected from nationally recognized measure stewards. However, due to the highly specialized and targeted nature of the evaluation, most measures were customized based on existing measure specifications, such as the Healthcare Effectiveness Data and Information Set (HEDIS®)[3-3] technical specifications or SUD monitoring metrics, in order to provide the most consistent and accurate calculation of measures. Table 3-4 displays the evaluation measures. Full measure specifications for each evaluation measure are presented in Appendix C.

Table 3-4—Evaluation Measures

Measure Number	Measure Name	Measure Stewards
Aim One: Improve Access to Health Care for Beneficiaries with an SUD		
Evaluation Question 1: Did the demonstration improve access to healthcare for beneficiaries with an SUD?		
Hypothesis 1: The demonstration will increase access to evidence-based SUD treatment reflected in increased utilization.		
1	Percentage of Beneficiaries Receiving Any SUD Treatment Service	CMS-constructed
2	Percentage of Beneficiaries Who Use Residential Services for SUD	CMS-constructed
3	Percentage of Beneficiaries Who Use Withdrawal Management Services	CMS-constructed
4	Percentage of Beneficiaries Who Have a Claim for MAT for SUD	CMS-constructed
5	Average Number of IMD Stays for SUD	CMS-constructed

[3-3] HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).

Measure Number	Measure Name	Measure Stewards
6	Average Number of Days of IMD Treatment for SUD	CMS-constructed
Hypothesis 2: The demonstration will increase access to evidence-based SUD treatment, reflected in increased capacity.		
7	Average Length of Stay of IMD Stays for SUD	CMS-constructed
8	Number of Providers Enrolled in Medicaid and Who Deliver SUD Services	CMS-constructed
9	Number of Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services	CMS-constructed
10	Number of Beds Available in IMD Facilities Providing SUD Services	State-identified
11	Number of Outpatient Facilities Offering Detoxification	SAMHSA
12	Number of Facilities Offering Opioid-Specific Detoxification	SAMHSA
13	Opioid Treatment Programs	SAMHSA
14	Outpatient Facilities Offering OTPs	SAMHSA
15	Residential (Non-Hospital) Facilities Offering OTPs	SAMHSA
16	Medication-Assisted Opioid Therapy Provided at Facilities with OTPs	SAMHSA
17	Any Type of MAT	SAMHSA
18	Needing But Not Receiving Treatment at a Specialty Facility for Illicit Drug/SUD in the Past Year	SAMHSA
Hypothesis 3: The demonstration will increase access to care for physical health conditions among beneficiaries with an SUD.		
19	Percentage of Medicaid Beneficiaries with an SUD Who Had an Ambulatory or Preventive Care Visit	HEDIS
Aim Two: Improve Quality of Care for Beneficiaries with an SUD		
Evaluation Question 1: Did the demonstration improve the quality of SUD treatment?		
Hypothesis 1: The demonstration will improve rates of identification, initiation, and engagement in treatment for SUD.		
20	Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis	NCQA, NQF #0004
21	Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit	NCQA, NQF #0004
Hypothesis 2: The demonstration will improve rates of adherence to and retention in treatment for SUD.		
22	Continuity of Pharmacotherapy for OUD	USC, NQF #3175
Hypothesis 3: The demonstration will reduce ED use for SUD.		
23	Average Number of ED Visits for SUD	State-identified
Hypothesis 4: The demonstration will reduce readmissions for SUD.		
24	30-Day Readmission	CMS-constructed
Hypothesis 5: The demonstration will reduce overdose deaths, particularly those due to opioids.		
25	Rate of Overdose Deaths, Overall and Due to Opioids	CDC
Aim Three: Maintain or Reduce Costs		
Evaluation Question 1: Did the demonstration maintain or reduce total cost of care?		
Hypothesis 1: The demonstration will reduce inpatient hospitalization and ED use for SUD.		
26	Average Number of Inpatient Stays for SUD	CMS-constructed
27	Average Number of Days of Inpatient Hospitalization for SUD	CMS-constructed
28	Average Length of Stay of Inpatient Hospitalization for SUD	CMS-constructed

Measure Number	Measure Name	Measure Stewards
Hypothesis 2: The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with an SUD.		
29	Average Number of Inpatient Stays for Any Cause	CMS-constructed
30	Average Number of Days of Inpatient for Any Cause	CMS-constructed
31	Average Length of Stay of Inpatient Hospitalization for Any Cause	CMS-constructed
32	Average Number of ED Visits for Any Cause	CMS-constructed
Hypothesis 3: The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with an SUD.		
33	PMPM Cost for SUD Treatment	CMS-constructed
34	PMPM Cost	CMS-constructed

Note: CDC: Centers for Disease Control and Prevention; CMS: Centers for Medicare & Medicaid Services; ED: emergency department; HEDIS: Healthcare Effectiveness Data and Information Set; IMD: institution for mental diseases; MAT: medication assisted treatment; NCQA: National Committee for Quality Assurance; NQF: National Quality Forum; OTP: opioid treatment program; OUD: opioid use disorder; PMPM: per member per month; SAMHSA: Substance Abuse and Mental Health Services Administration; SUD: substance use disorder; USC: University of Southern California

Data Sources

Multiple data sources were used to evaluate the 12 hypotheses of the evaluation.

- Administrative Data
  - Medicaid claims and eligibility data
  - MCO non-claims reporting data
  - Provider enrollment data
- National Surveys
  - National Survey on Drug Use and Health (NSDUH) data
  - National Survey of Substance Abuse Treatment Services (N-SSATS) data
  - Centers for Disease Control and Prevention (CDC) National Center for Health Statistics data
- Key Informant Interviews

Administrative

Administrative claims and encounter data supplied by DHHS were used to calculate most measures in this Interim Evaluation Report. The claims and encounter data included member enrollment and eligibility files; member demographics; provider files; provider specialty reference data; and institutional, professional, and pharmacy claims data. MCO non-claims reporting data included templated reports that MCOs submit on non-claims data, quality measures, and qualitative information on an ad hoc basis. The provider enrollment database, which lists all providers contracts with MCOs to furnish Medicaid-reimbursed services, was used to calculate the number of providers offering SUD treatment.

National Surveys

NSDUH is a comprehensive survey of substance use, SUDs, mental health, and the receipt of treatment for those disorders. Prior to 2020, NSDUH conducted face-to-face household interviews. Starting in 2020, NSDUH conducted both face-to-face household interviews and web-based interviews. Information from this survey was used where possible to provide context for similar measures nationally. N-SSATS is an annual survey of public and private substance abuse treatment facilities that gathers general information, characteristics of facilities and client count information. Overdose mortality data were obtained from the CDC National Center for Health Statistics.

Key Informant Interviews

HSAG conducted semi-structured interviews with State administrators, providers, and MCO staff involved in the provision of care to Nebraska Medicaid beneficiaries as a part of the Waiver. The interviews collected data on perceptions and experiences during the early stages of the Waiver regarding:

- Experiences with access, care coordination and transitions, and quality of care for SUD treatment recipients.
- Perceptions of barriers and drivers of success associated with the implementation of the Waiver.
- Unintended consequences encountered during the implementation of the Waiver.
- Impacts of the COVID-19 PHE on the implementation of the Waiver.

To engage with key informant interviewees, HSAG collaborated with DHHS to identify a list of providers and MCOs who have experience delivering services under the Waiver, as well as knowledgeable DHHS staff. HSAG recruited provider interviewees by geographic region; location within each region (e.g., urban versus rural providers); and relevant specialty. After stratifying the provider lists, HSAG sampled providers to maximize variation in provider types and locations so that the data obtained from the interviews represents an informative sample of perspectives from a diverse group of stakeholders. Beginning in September 2021, identified stakeholders were outreached via email and telephone. HSAG conducted up to four rounds of email outreach, including one notification directly from the State, and one round of telephone outreach to 65 providers requesting participation in the interviews. Due to the low response rate among providers following five outreach attempts, only 10 provider interviews were completed for the Interim Evaluation Report. This is fewer than the prescribed 30 provider interviews outlined in the evaluation design.

The interviews were conducted virtually from October 2021 through February 2022. A total of 10 healthcare providers, 14 DHHS staff members, and three MCOs were interviewed for the Interim Evaluation Report. Interviews lasted approximately 60 minutes to allow time for all participants to voice their detailed perspectives and experiences. The interviews were recorded and transcribed with the participants' permission to highlight key themes while maintaining their anonymity.

Notes and transcription were analyzed using open coding techniques to identify key themes and concepts raised by interviewees. Axial coding techniques were subsequently used to identify relationships between the concepts identified during open coding. The results of the analysis did not provide a statistically representative sample of experiences with the implementation of the Waiver. Rather, the responses obtained through key informant interviews were intended to provide the context for the breadth and variety of experiences among key stakeholders. Particularly with respect to provider responses, experiences of other providers may differ from those described in this report.

Analytic Methods

Multiple analytic techniques were used depending on the type of data for the measure and the availability of data.

Descriptive content analysis was used to present data related to process evaluation measures gathered from document reviews. The data were summarized to describe the activities undertaken, including highlighting specific successes and challenges.

Descriptive statistics, including frequency distributions and time series (presentation of rates over time), were used for quantitative process measures to describe the output of specific Waiver activities. These analysis techniques were also used for some short-term outcome measures in cases where the role of the measure was to describe changes in the population, but not to show specific effects of the Waiver.

Interrupted Time Series

The ITS design included monthly observations of each measure over time, beginning two years prior to the Waiver implementation. The simple ITS model of a single baseline period and single intervention period was extended to accommodate the phased implementation of the Waiver, which varies from the traditional design by considering an initial implementation period followed by a full implementation period. Thus, two counterfactuals were considered for the analysis: (1) a counterfactual based on the projected baseline trend as it would have happened without being "interrupted" by the initial Waiver implementation, as well as (2) a counterfactual based on the projected trajectory of the initial implementation trend, had the additional waiver components not been implemented. Specific outcome measures were collected for multiple time periods both before and after the demonstration period and related interventions. The trend and level of outcome measurements collected after the initial implementation were compared to the baseline projected trend and level of outcome measurements to evaluate the impact of the program. However, the trend and level of outcome measurements collected after the full implementation were compared to those of the *prior* period (initial implementation) instead of the baseline period. The generic ITS model used for the evaluation is:

$$Y_t = \beta_0 + \beta_1 time_t + \beta_2 initial\_post_t + \beta_3 time \times initial\_post_t + \beta_4 full\_post_t + \beta_5 time \times full\_post_t + \mu_t$$

Where Y_t is the outcome of interest for the time period *t*, *time* represents the time since the start of the evaluation period, *initial_post* is a dummy variable to indicate the time period post-initial implementation, $time \times initial\_post$ is the interaction term between *time* and *initial_post*, *full_post* is a dummy variable indicating the time period post-full implementation, and $time \times full\_post$ is the interaction term between time and *full_post*. The coefficient, β_0, identifies the starting level of outcome *Y*, β_1 is the slope of the outcome between the measurements before the program, β_2 is the level change in the outcome at initial implementation, β_3 is the change in the slope for the measurements after initial implementation, β_4 is the level change of the outcome at full implementation, and β_5 is the change in the slope of the measurements after full implementation.

Indicator variables were added to the ITS model specified above for each quarter of the year to adjust for seasonality in the trend. Adjustment for the COVID-19 PHE was made by creating an indicator variable for Quarter (Q) 2 of 2020 to represent the initial wave of COVID-19 PHE-related shutdowns and stay-at-home orders, and a separate indicator variable for Q3 of 2020 through the end of Q1 of 2021 to reflect subsequent state-specific public health orders. As Medicaid expansion is expected to impact outcomes related to healthcare coverage, access, and quality, a separate indicator variable for the expansion time period was added to control for this influx of beneficiaries.

There are four coefficients of interest from the ITS analysis. The level change variables β_2 and β_4 indicate an "immediate" effect and represent how the outcome level has changed from the baseline period to the first observation in the initial implementation period, as well as from the initial implementation to the first observation in the full implementation period, respectively. The change in monthly trend variables β_3 and β_5 indicates an effect over time and represent the change in slope of the monthly trend comparing the initial implementation period to the baseline period, and the full implementation period to the initial implementation period, respectively.

Separate ITS models were conducted on the total waiver population and non-expansion population. As data for the total and non-expansion populations was available for the entire evaluation study period, the ITS model specified above with both initial and full implementation periods was used. For each ITS model Newey-West standard errors were estimated to account for possible autocorrelation and heteroscedasticity.[3-4, 3-5]

For the total and non-expansion population ITS models, administrative claims data from SFY 2017 served as an intake year prior to the baseline period for identifying members with an SUD diagnosis according to *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 5.0, Metric #3: Medicaid Beneficiaries with SUD diagnosis (monthly)*. Metric #3 uses an 11-month lookback period to identify SUD members; therefore, members during this intake period necessarily had a claim for an SUD and rates for this time period are biased as a result of the identification of SUD members. As the baseline period for the Interim Evaluation Report begins SFY 2018, this intake period is not included in the analysis and this bias has limited impact for the total and non-expansion populations. However, for the expansion population, where members began receiving Medicaid coverage in October 2020, the bias resulting from the SUD identification method is present and is expected to impact rates during the first 12 months following expansion. As such, the period of October 2020 through September 2021 is excluded from the total population ITS model and expansion population analysis and October 2021 is treated as the first time the expansion population "enters" the analysis. As this effectively precludes an ITS analysis for the expansion population, a descriptive analysis of measure rates for this population was conducted instead.

Trend Analysis

For measures wherein an ITS analysis was not available, a regression model incorporating both the linear trend in the baseline period and dummy variables for the evaluation period years was used for trend analysis. In this model, observed rates during the evaluation period were compared against the projected rates if the baseline trend had continued. Logistic regression was utilized to evaluate measures with binary outcomes. The general form of the model is:

$$\ln(Y) = \beta_0 + \beta_1 TIME + \sum \beta_t \delta_t$$

Where β_0 is the intercept representing the natural log of the rate at the first baseline year; β_1 is the average annual change in the logged rate during the baseline period, as a function of *TIME*; and $\sum \beta_t \delta_t$ represents the impact of a series of dummy variables representing each evaluation year *t*. The coefficients for these dummy variables

3-4 Linden Consulting. Conducting interrupted time-series analysis for single- and multiple-group comparisons. Available at: http://www.lindenconsulting.org/documents/ITSA_Article.pdf. Accessed on: Mar. 16, 2023.

3-5 Turner SL, *et al*. "Evaluation of statistical methods used in the analysis of interrupted time series studies: a simulation study." *BMC Medical Research Methodology* 21(2021). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8403376/. Accessed on: Feb. 27, 2023.

represent the difference in the logged rate from the last year of the baseline period to the year represented by the dummy variable. *TIME* is the piecewise trend parameter for the baseline period defined as a linear trend in the baseline period and is held constant in the evaluation period by setting it equal to the value of the last year of the baseline period.

A series of hypothesis tests of the linear combination of coefficients were performed to determine if the evaluation period rates were significantly different from the projected evaluation period rates based on the *TIME* coefficient and the intercept.

Descriptive Time Series

Measures for which there are insufficient data points for a robust ITS analysis and no viable comparison group were assessed through a descriptive analysis of trends in the data.

Other Analyses

Financial Analysis

The cost analysis is designed to analyze the differences between actual and projected costs and trends for the evaluation period. Note that the cost analyses do not refer to or attempt to replicate the formal Budget Neutrality test required under Section 1115 Demonstration Waiver programs, which sets a fixed target under which waiver expenditures must fall that was set at the time the waiver was approved. HSAG's methodology for analyzing the Waiver's costs is based on CMS' guidance for assessing the costs of SUD or serious mental illness (SMI) evaluations.[3-6]

SUD diagnoses were defined as having an SUD-related treatment service or SUD diagnosis in one of the following HEDIS MY 2020 Value Sets or Medications Lists:

- Alcohol and Other Drug (AOD) Medication Treatment Value Set
- Alcohol Use Disorder Treatment Medication Lists
- Opioid Use Disorder Treatment Medication Lists
- Alcohol Abuse and Dependence
- Opioid Abuse and Dependence
- Other Drug Abuse and Dependence

Members were considered a part of the SUD cost analysis group beginning the first month in which they had a relevant diagnosis or treatment claim for an SUD, and up to 11 additional months that did not include relevant claims, if the beneficiary remained enrolled in Medicaid. If a member had additional claims with a relevant diagnosis or treatment code, their inclusion in the SUD cost analysis group was extended to include up to 11 additional months following the subsequent claim, if the member remained enrolled in Medicaid.

[3-6] United States Department of Health and Human Services. Appendix C: Approaches to Analyzing Costs Associated with Section 1115 Demonstrations for Beneficiaries with Serious Mental Illness/Serious Emotional Disturbance or Substance Use Disorders. Available at: https://www.hhs.gov/guidance/document/appendix-c-analyzing-costs-associated-demonstrations-smised-or-sud-0. Accessed on: Mar. 17, 2023.

Cost of care for SUD beneficiaries based on managed care plan payment amounts and fee-for-service reimbursement amounts were calculated for each member in each month. To identify costs associated with the diagnosis and treatment of SUD, total costs were split into SUD-IMD costs, Other SUD costs and Non-SUD costs. To identify the source of treatment cost drivers for beneficiaries, total costs were stratified by the categories of service presented in Table 3-5. Data were aggregated across all members in order to calculate per-member per-month (PMPM) costs for each month of the Waiver and 24 months prior.[3-7] ITS analyses were conducted for total cost of care, as well as for each level of cost stratification mentioned above. Seasonality indicators and variables indicating time periods affected by the COVID-19 PHE and Medicaid expansion were included in the model to control for these factors.

Table 3-5—Categories of Service

Categories of Service
IP
OP (ED and Non-ED)
LTC
Professional
Pharmacy

Note: ED: emergency department; IP: Inpatient LTC: long-term care; OP: outpatient

3-7 CMS guidance describes constructing an interrupted time series with member-level controls. However, due to a low prevalence of costs for most members—especially when stratified by category of service—robust statistical analysis at the member-level was not feasible. CMS guidance references literature on evaluating healthcare expenditures using a two-part model as one mechanism to account for this issue; however, the method described in the literature is not applied in an ITS framework, which relies on assessing trends in costs. Given the frequency of months in which beneficiaries did not incur any costs and the unbalanced nature of the panel dataset, member-level trends could not be reliably estimated.

4. Methodological Limitations

Evaluation Design

In this Interim Evaluation Report, Health Services Advisory Group, Inc. (HSAG), presents baseline and evaluation period rates for performance measures and other metrics that align with the primary objectives of the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver). A particular strength of this evaluation is the use of varied data sources to address a wide breadth of metrics assessing service utilization, access to care, quality of care, and beneficiary well-being.

Four key limitations exist for the data, measures, and methods used for this Interim Evaluation Report. First, a viable in-state comparison population was not available as the Waiver was implemented for all beneficiaries throughout the State simultaneously, and all beneficiaries who were eligible for the Waiver interventions received them. A comparison group of similarly situated Medicaid beneficiaries who have not received the programming changes delivered by the Waiver will be critical for obtaining a proper counterfactual comparison in the Summative Evaluation Report. The comparison group will serve as the basis for understanding what may have happened to the healthcare and health outcomes of beneficiaries if the program being evaluated had not been put in place. It is possible that Transformed Medicaid Statistical Information System (T-MSIS) data from the Centers for Medicare & Medicaid Services (CMS), while unavailable for this report, may become available for use in forming a counterfactual comparison group for the Waiver population by the time the Summative Evaluation Report is developed. HSAG will assess the availability and feasibility of utilizing T-MSIS data for constructing an out-of-state comparison group for the Summative Report. Additionally, at the time of the Interim Evaluation Report, data could not be obtained from another state with similar population characteristics and similar Medicaid policies and procedures in place. Therefore, the counterfactual comparison used in this report is the comparison of measure rates projected out from the baseline into the evaluation period of the Waiver. Where sufficient data points were available, HSAG employed an interrupted times series (ITS) analysis to make comparisons while accounting for underlying seasonal trends and external factors that could influence the outcome. The results indicate whether the measure rates increased or decreased, and whether the results represented statistically significant changes in performance. It is also possible that co-interventions or other events occurring at the same time as the Waiver may have confounded measure rates; as such, a comparison of rates during the baseline period to the evaluation period would not be able to disentangle those effects from the Waiver's effects.

A second key limitation of the results presented in this Interim Evaluation Report is the impact of the coronavirus disease 2019 (COVID-19) public health emergency (PHE). The COVID-19 PHE impacted the healthcare industry and the entire population on a global scale, requiring substantial changes to the processes used in the delivery of healthcare. In Nebraska, as was true across the country, healthcare utilization was significantly reduced in 2020 (and to a lesser extent in 2021) and is likely to have impacted the results shown in this Interim Evaluation Report. Where possible, adjustments for the impact of the COVID-19 PHE were made in the analyses. For measures analyzed using ITS, knowledge of state-specific case counts, shutdowns, and stay-at-home orders was incorporated into the model to account for the effect of the COVID-19 PHE by controlling for affected quarters or years in the regression analyses. However, it is still possible that program impacts were confounded by the impact of the COVID-19 PHE, and the analysis cannot fully disentangle the two sources of change.

A third key limitation stems from the fact that administrative data for June 2022 contained only four months of run-out. Based on analyses of the data, it is estimated that four months of run-out captured an average of approximately 88.7 percent of paid claims/encounters. Although this may reduce the value of some measures,

where decreases in outcome measures are identified, the trends extend to months for which full run-out was available and the impact on the analysis was minimal.

Lastly, the timing of the Waiver coincided with the expansion of Medicaid in October 2020 during which a substantial number of Nebraskans became eligible. As such, it is difficult to separate the impact of Medicaid expansion from Waiver program impacts. While adjustment for the post-expansion time period was made in the model for the total Waiver population, the results for the total population ITS should be interpreted with caution as Waiver impacts may be conflated with expansion impacts. Furthermore, the identification of SUD members according to *Monitoring Metric #3: Medicaid Beneficiaries with SUD diagnosis (monthly)* necessitated removing the first 12 months of rates in the expansion population to avoid biasing the results.[4-1] Doing so eliminated much of the data points prior to full implementation and allowed only a descriptive analysis of the expansion population measure rates. Additional methodological adjustments to account for expansion effects, prevent SUD group identification bias, and incorporate all time points will be considered for the Summative Evaluation Report.

Data Sources

The data used in the Interim Evaluation Report includes administrative data, Medicaid claims/encounter data, member enrollment and eligibility data, demographic data, managed care organization (MCO) reports, and national survey data. The variety of data sources for this evaluation is a major strength as it allows the State to uniquely answer research questions that might not otherwise be possible with administrative data. While using numerous data sources in this Interim Evaluation Report is a desirable strength, each source has weaknesses which are important to understand within the context of the evaluation. The claims and encounter data used to calculate performance metrics were generated as part of the billing process for Medicaid and, as a result, may not be as complete or sensitive for identifying specific healthcare processes and outcomes as might have been expected from a thorough review of a patient's medical chart. This weakness may be mitigated in part if the lack of sensitivity in the claims and encounter data remains relatively stable over time and if the measures calculated from these data follow trends consistent with the underlying processes and outcomes of interest.

National survey data from the National Survey of Substance Abuse Treatment Services (N-SSATS) and the National Survey on Drug Use and Health (NSDUH) were used to assess certain outcomes that could not be captured through administrative data. Data from the National Center for Health Statistics were used to assess the rate of overdose deaths including those due to opioids. All publicly available data from these sources were retrieved but may not have covered the entirety of the evaluation period; in particular, 2022 survey data were not available at the time of this report. Data files from MCO reports were used to identify Institutions for Mental Disease (IMD) stays for Measures 5, 6, and 7; however, HSAG was unable to independently confirm and validate these IMD stays for the Interim Evaluation Report. While the MCO reports contained sufficient data to calculate IMD measures related to the number of stays, number of days and average length of stay, they lacked available data on costs related to these stays. As a result, a different approach for identify costs related to IMD stays was necessary; cost information for IMD stays from the claims and encounter data extract was used instead. It is important to note that due to the use of various data sources, the IMD stays represented in the cost analyses may not exactly match the stays that are reported for the IMD measures. HSAG and the Nebraska Department of Health and Human Services (DHHS) will work together to align on the methodology for IMD stays identification for the Summative Evaluation Report.

[4-1] Centers for Medicare & Medicaid Services, Mathematica. *Medicaid Section 1115 Substance Use Disorder Demonstrations: Technical Specifications for Monitoring Metrics;* September 2022: Version 5.

5. Results

The following section details measure results by hypotheses and related evaluation questions for the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver). This Interim Evaluation Report provides results from the baseline period and first three years of the evaluation period. Details on measure definitions and specifications can be found in Appendix C. Table 5-1 presents the criteria used to determine whether results supported the hypothesis for each measure.

Table 5-1—Measure Conclusion Criteria

Conclusion	Criteria
Supports	• Statistical testing results were significant in a favorable direction. • For hypotheses stated as maintaining the status quo, statistical testing results were not significant for both implementation periods. • For measures without statistical testing, there was conclusive evidence of moderate to large, sustained improvements in the results.
Neither supports nor fails to support (NS/FS)	• Statistical testing results were ambiguous across both implementation periods. • For measures without statistical testing, there was no conclusive evidence of moderate to large, sustained increases or decreases in the results.
Does not support	• Statistical testing results were significant in an unfavorable direction. • For hypotheses stated as a directional change, statistical testing results were not significant for both implementation periods. • For measures without statistical testing, there was conclusive evidence of moderate to large, sustained worsening in the results.
Insufficient data	• There were no pre-implementation data or insufficient data points during the Waiver implementation period to make a determination of increases/decreases in rates directly attributable to the Waiver.

Results Summary

To determine the impact the Waiver had on the percentage of beneficiaries receiving any SUD treatment service, Health Services Advisory Group, Inc. (HSAG), conducted an interrupted time series (ITS) analysis, controlling for seasonality, the coronavirus disease 2019 (COVID-19) public health emergency (PHE)-affected time periods, and the expansion of the Medicaid program. Members enrolled through Medicaid expansion were not included in the measure rates until October of 2021 to allow for a one-year ramp-up period for identifying SUD members (see the Methodology section for additional details). Additionally, analysis focused on the non-expansion Medicaid population in order to best isolate the impact of the intervention in the absence of Medicaid expansion, however, results for the total Waiver population and Medicaid expansion population are also presented for comparison.

For each ITS measure, the first figure provides a comparison between the observed rates and the estimated counterfactuals (the projected rates had each Waiver period not been implemented) for both the non-expansion Medicaid members and the total Medicaid population. The blue line represents the model-based average rates for each month, and the dashed grey lines represent the estimated counterfactual projection of the baseline period trend through June 2021 and the projection of the initial implementation period trend from June 2021 to June 2022. Three vertical reference lines are also included in the figure; the short dash grey reference lines denote the

start of the initial and full implementation periods beginning in July 2019 and June 2021, respectively. The long dash grey reference line represents when expansion members are included in the analysis in October 2021. Additionally, a second figure is included to display the monthly rates for the total Medicaid population (blue), the non-expansion members (green), and the expansion-only members (orange). This figure also includes similar vertical reference lines as were included in the first figure.

Aim One: Improve Access to Health Care for Beneficiaries with an SUD

Evaluation Question 1: Did the demonstration improve access to healthcare for beneficiaries with an SUD?

Hypothesis 1: The demonstration will increase access to evidence-based SUD treatment reflected in increased utilization.

Percentage of Beneficiaries Receiving Any SUD Treatment Services (Measure 1)

Measure 1 assesses whether the Waiver has increased access to SUD treatment by determining the percentage of beneficiaries who are receiving any SUD service. For non-expansion beneficiaries, analysis showed that the baseline trend was flat at -0.01 percentage points per month. However, after initial implementation with the Institutions for Mental Disease (IMD) coverage of stays > 15 days, the rate increased significantly by 0.15 percentage points per month compared to projected rates had the baseline trend continued (p=0.001). Following full implementation of the Waiver and the addition of the medication-assisted treatment (MAT) and opioid treatment program (OTP) services, the trend decreased by 0.21 percentage points per month compared to projected rates had the initial implementation trend continued (p<0.001).

Although no statistical testing was performed, rates for the expansion population were noticeably higher following their inclusion in the analysis beginning in October 2021. This may be driven by ongoing pent-up demand as these members continue to access needed services.

Based on the overall improvement in the rates for the non-expansion group during the Waiver period compared to the baseline period and the significant increase in rates for the initial implementation period compared to projected rates had the baseline trend continued, this measure supports the hypothesis that the Waiver will increase access to SUD treatment. Table 5-2 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-1 illustrates the mode-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-2 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-2—ITS Results (Measure 1, Non-Expansion and Total Population)

Variable	Non-Expansion Estimate	Non-Expansion *p*-value	Total Estimate	Total *p*-value
Intercept	26.35p.p.***	<0.001	26.42p.p.***	<0.001
Baseline monthly trend	-0.01p.p.	0.683	-0.01p.p.	0.710
Level change at initial implementation	0.75p.p.	0.375	0.72p.p.	0.408
Change in monthly trend – initial implementation	0.15p.p.**	0.001	0.15p.p.**	0.001
Level change at full implementation	-0.98p.p.	0.438	-1.02p.p.	0.407
Change in monthly trend – full implementation	-0.21p.p.***	<0.001	-0.13p.p.*	0.081

*p< 0.1, **p<0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-1—Illustration of ITS Analysis (Measure 1, Non-Expansion and Total Population)

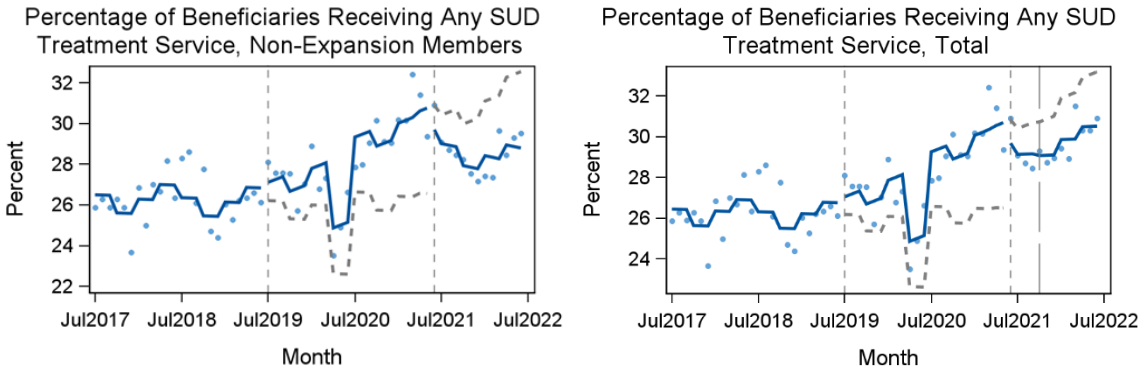
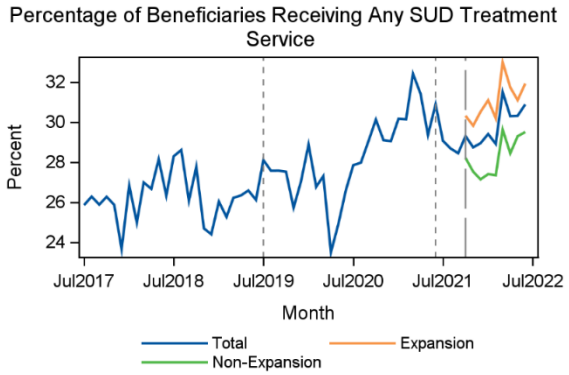


Figure 5-2—Measure 1 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 1 Conclusion: Supports the hypothesis

Percentage of Beneficiaries Who Use Residential Services for SUD (Measure 2)

Measure 2 assesses whether the Waiver has increased access to SUD treatment by determining the percentage of beneficiaries who use residential services for SUD. Prior to the initial implementation of the Waiver, baseline rates were flat at 0.01 percentage points per month. After the initial implementation, during which coverage was

extended to IMD stays longer than 15 days, there was a statistically significant level change of 0.36 percentage points (p=0.003). The trend upon initial implementation decreased by 0.01 percentage points per month compared to projected rates had the baseline trend continued; however, this change was not statistically significant (p=0.475). After full implementation with the addition of MAT/OTP services, there was a statistically significant level change of -0.25 percentage points (p=0.084) and a statistically significant increase in the trend of 0.03 percentage points per month compared to projected rates had the baseline trend continued (p=0.022). These results are consistent with implementation plan goals to promote and expand the offering of MAT on-site at residential treatment facilities or facilitate off-site access. The impact of the COVID-19 PHE is evidenced by a dip occurring in the rates in early 2020.

Based on the significant increase in the non-expansion rates each month in the full implementation period compared to the projected rates had the initial implementation trend continued, this measure supports the hypothesis that the Waiver will increase the percentage of beneficiaries who use residential services for SUD. Figure 5-3 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-3 show the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-4 displays the average rate for the total Medicaid population (blue), the non-expansion members (green), and the expansion-only members (orange) from July 2017 to June 2022.

Table 5-3—ITS Results (Measure 2, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	0.89p.p.***	<0.001	0.87p.p.***	<0.001
Baseline monthly trend	0.01p.p.	0.466	0.01p.p.	0.459
Level change at initial implementation	0.36p.p.**	0.003	0.36p.p.**	0.003
Change in monthly trend – initial implementation	-0.01p.p.	0.475	-0.01p.p.	0.482
Level change at full implementation	-0.25p.p.*	0.084	-0.27p.p.*	0.085
Change in monthly trend – full implementation	0.03p.p.**	0.022	0.05p.p.	0.197

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-3—Illustration of ITS Analysis (Measure 2, Non-Expansion and Total Population)

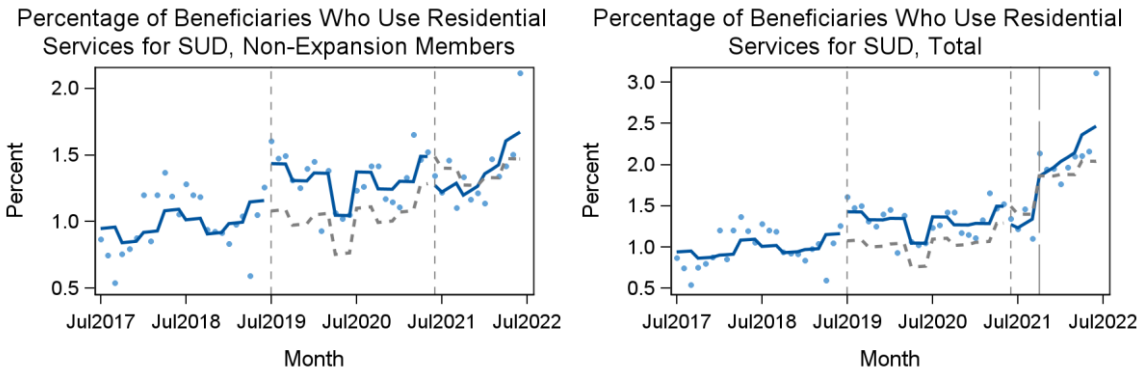
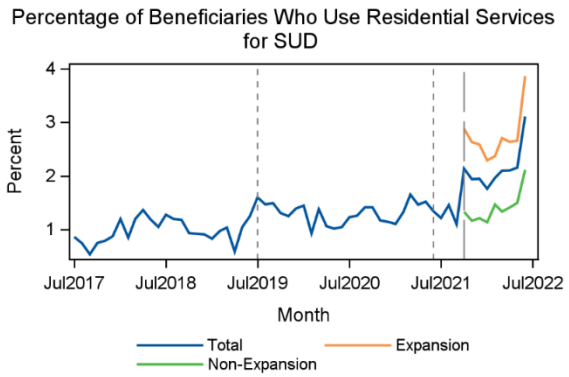


Figure 5-4—Measure 2 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 2 Conclusion: Supports the hypothesis

Percentage of Beneficiaries Who Use Withdrawal Management Services (Measure 3)

Measure 3 seeks to determine whether the Waiver increased the percentage of beneficiaries with an SUD who use withdrawal management services. Following full implementation of the Waiver, which added services for medically monitored inpatient withdrawal (MMIW) management and MAT/OTP, there was a statistically significant level change of -0.36 percentage points compared to the initial implementation period (p=0.067). There were no statistically significant changes in monthly trend comparing the initial implementation period to the baseline period, or when comparing the full implementation period to the initial implementation period (p=0.469 and p=0.799, respectively). The impact of the COVID-19 PHE is evidenced in the drop-in rates occurring in April 2020. Rates for Medicaid expansion members were consistently higher than those for the non-expansion and total groups.

Impacts on use of withdrawal management services are not expected to be observed until full implementation of the MMIW component in June 2021. Observed rates in the full implementation period are consistently lower than the projected trend had the trend in the baseline and initial implementation periods continued and may suggest a substitution effect in which management of withdrawal shifted to more clinically appropriate settings available under the new MMIW service category. As such, these measure results do not support the hypothesis.

Figure 5-5 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-4 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-6 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to June 2022.

Table 5-4—Primary Results of ITS Analysis (Measure 3, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	0.38p.p.***	<0.001	0.37p.p.***	<0.001
Baseline monthly trend	0.01p.p.**	0.002	0.01p.p.**	0.001
Level change at initial implementation	-0.07p.p.	0.406	-0.08p.p.	0.355
Change in monthly trend – initial implementation	0.00p.p.	0.469	0.00p.p.	0.439
Level change at full implementation	-0.36p.p.*	0.067	-0.35p.p.*	0.058
Change in monthly trend – full implementation	0.00p.p.	0.799	0.00p.p.	0.731

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-5—Illustration of ITS Analysis (Measure 3, Non-Expansion and Total Population)

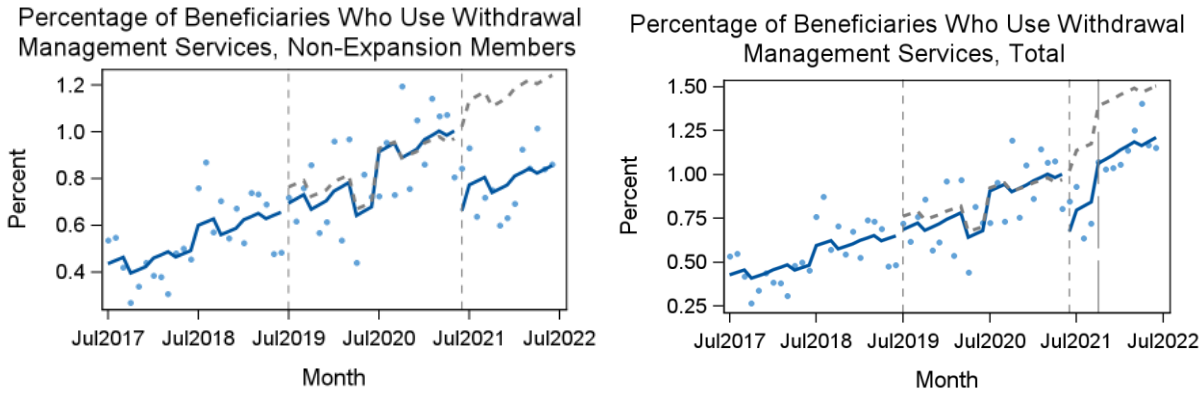
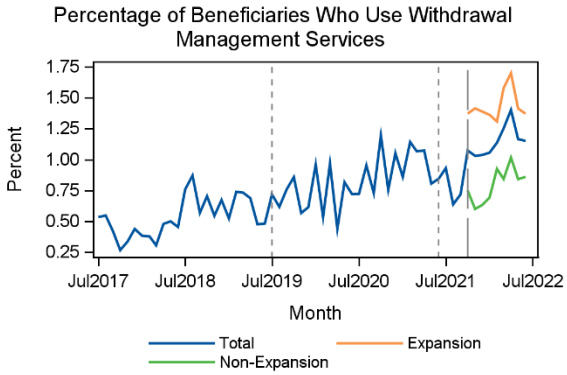


Figure 5-6—Measure 3 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 3 Conclusion: Does not support the hypothesis

Percentage of Beneficiaries Who Have a Claim for MAT for SUD (Measure 4)

Measure 4 seeks to determine whether the Waiver increased access to MAT for SUD by assessing the number of beneficiaries who have a claim for MAT among those diagnosed with an SUD. The monthly trend in the initial implementation period decreased by 0.03 percentage points per month compared to projected rates had the baseline trend continued, a statistically significant change at the 10 percent level (p=0.079). A large level change at initial implementation of 0.73 percentage points was also statistically significant (p=0.015). This level change may be driven by the expanded coverage of IMD stays resulting in a higher number of MAT claims captured for members with an SUD. The change in monthly trend during the full implementation period increased by 0.02 percentage points per month compared to projected rates had the initial implementation trend continued, also a statistically significant change (p=0.031).

The rates for the total Medicaid population followed a similar upward trend as the non-expansion population. Between October 2021 and June 2022, the rates of expansion beneficiaries who had a claim for MAT for an SUD were consistently lower than the rates for the non-expansion and total groups.

Based on the overall improvement of the rates over time and the improvement in the rates at full implementation, compared to projected rates had the initial implementation period trend continued, this measure supports the hypothesis that the Waiver increased access to MAT for SUD. Table 5-5 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-7 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-8 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-5—Primary Results of ITS Analysis (Measure 4, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	5.85p.p.***	<0.001	5.86p.p.***	<0.001
Baseline monthly trend	0.02p.p.	0.315	0.02p.p.	0.321
Level change at initial implementation	0.73p.p.**	0.015	0.74p.p.**	0.015
Change in monthly trend - initial implementation	-0.03p.p.*	0.079	-0.03p.p.*	0.078
Level change at full implementation	0.25p.p.	0.425	0.24p.p.	0.430
Change in monthly trend - full implementation	0.02p.p.**	0.031	0.02p.p.	0.452

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-7—Illustration of ITS Analysis (Measure 4, Non-Expansion and Total Population)

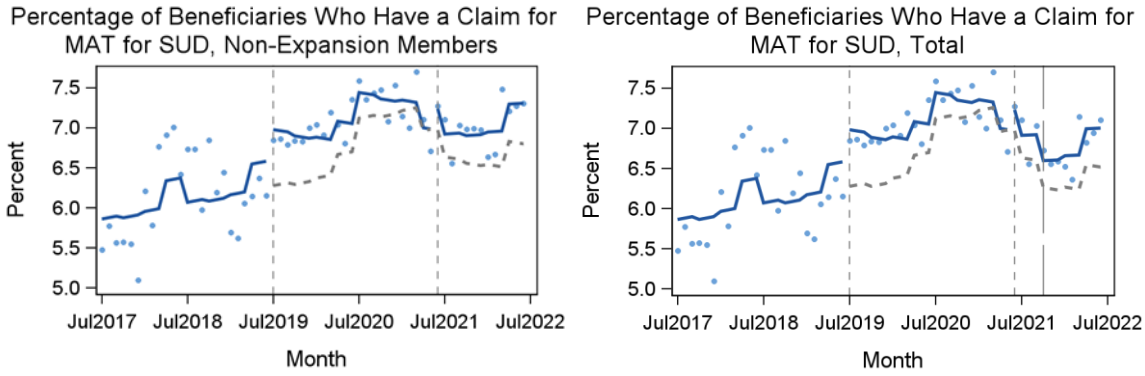
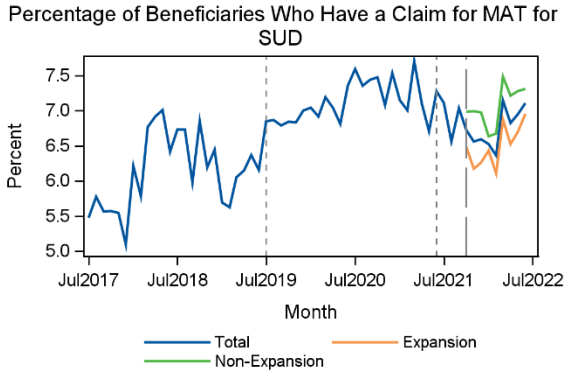


Figure 5-8—Measure 4 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 4 Conclusion: Supports the hypothesis

Average Number of IMD Stays for SUD (Measure 5)

Measure 5 was evaluated in two components, Measure 5a and Measure 5b. Measure 5a assesses the rate of IMD stays for SUD per 1,000 beneficiaries with an SUD diagnosis from a managed care organization (MCO) report on IMD stays from July 2019 to June 2022. To assess whether changes in the number of IMD stays for an SUD in the Waiver population are due to a change in the overall number of IMD stays for an SUD per beneficiary, or a change in the number of members with an SUD treated in an IMD, Measure 5b was calculated as a complement to Measure 5a and represents the rate of SUD beneficiaries with an IMD stay for an SUD, per 1,000 beneficiaries with an SUD diagnosis.

Because data reporting began in July 2019, coinciding with initial implementation of the Waiver, this rate represents only the post-implementation period. These data were provided to HSAG as reported by each MCO, and thus could not be confirmed or independently validated.

Approximately 10 IMD stays per 1,000 beneficiaries with an SUD diagnosis were reported at the start of the measurement period in July 2019 and declined by nearly two-thirds (65 percent) by September 2019. The higher rate in July 2019 may be related to initial implementation of the Waiver at this time, which extended Medicaid coverage to IMD stays greater than 15 days; however, without pre-implementation data, attribution to the Waiver cannot be made. The rate increased substantially in January 2021, where it remained elevated compared to prior

rates. Figure 5-9 shows the average number of IMD stays for an SUD per 1,000 beneficiaries with an SUD diagnosis in each month from July 2019 to June 2022. Overall, the trend in the number of SUD beneficiaries treated in an IMD (Measure 5b) followed a similar trajectory over time as the number of IMD stays for an SUD (Measure 5a). Upon initial implementation, approximately nine per 1,000 beneficiaries with an SUD were treated in an IMD. This rate declined to 3.3 per 1,000 beneficiaries by September 2019. Figure 5-10 illustrates the average number of beneficiaries with an IMD stay per 1,000 beneficiaries diagnosed with an SUD in each month.

While the rate of IMD stays per 1,000 beneficiaries with an SUD and the rate of SUD beneficiaries treated in an IMD for an SUD per 1,000 beneficiaries with an SUD were trending in an upward trajectory overall, due to the lack of pre-implementation data and viable comparison group, there are insufficient data to attribute any changes to the Waiver.

Figure 5-9—Average Number of IMD Stays per 1,000 Beneficiaries Diagnosed with an SUD (Measure 5a)

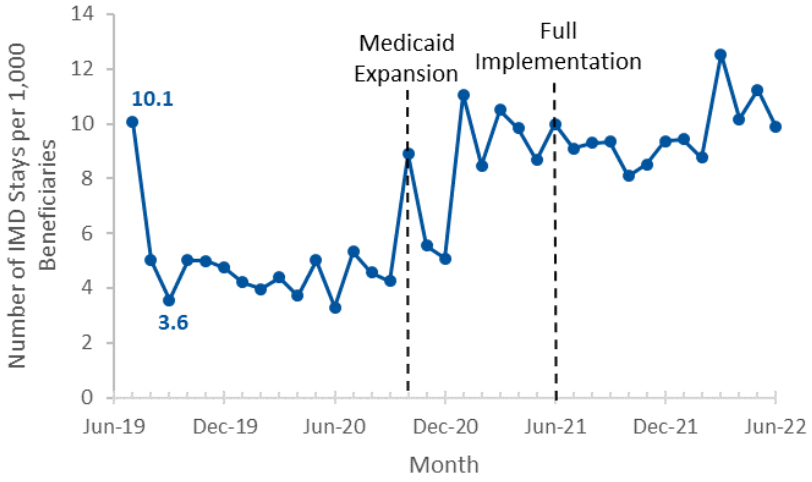
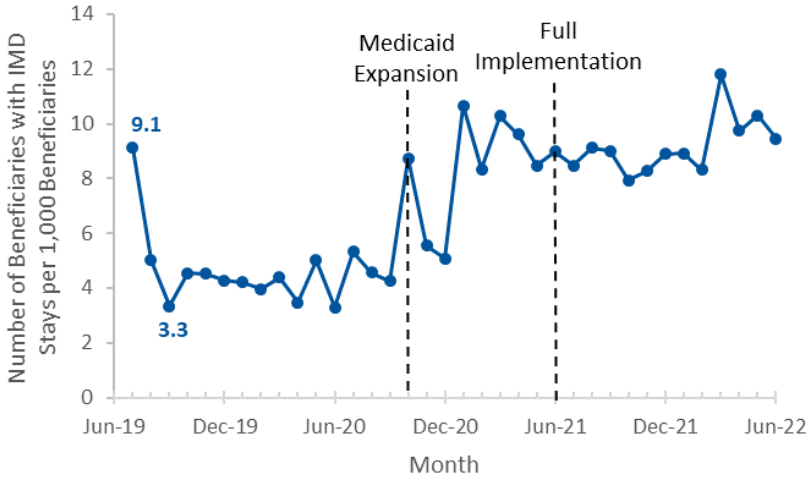


Figure 5-10—Average Number of Beneficiaries with an IMD Stay per 1,000 Beneficiaries Diagnosed with an SUD (Measure 5b)



Measure 5 Conclusion: Insufficient data

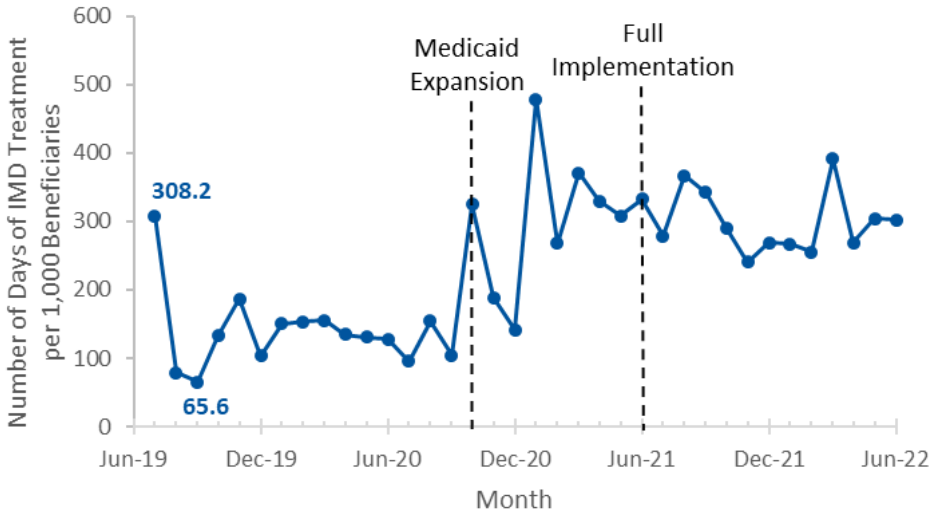
Average Number of Days of IMD Treatment for SUD (Measure 6)

Measure 6 assesses the average number of days of IMD treatment for SUD among beneficiaries with an SUD in Nebraska. Data for this measure were obtained from an MCO report on IMD stays from July 2019 to June 2022. These data were provided to HSAG as reported by each MCO, and thus could not be confirmed or independently validated.

At the time of initial implementation of the Waiver component extending coverage to IMD stays greater than 15 days, the average number of days of IMD treatment was 308.2 days per 1,000 beneficiaries with an SUD. The rate dropped to 65.6 days of IMD treatment for an SUD per 1,000 beneficiaries with an SUD in September 2019. Similar to Measure 5, the number of IMD days increased substantially in January 2021, where it remained elevated compared to prior rates. Figure 5-11 shows the average number of days of IMD treatment for SUDs per 1,000 beneficiaries with an SUD diagnosis in each month.

While the average number of days of IMD treatment for an SUD trended in an upward trajectory overall, due to the lack of pre-implementation data and viable comparison group, there are insufficient data to attribute any changes in the rate to the Waiver.

Figure 5-11—Average Number of Days of IMD Treatment for an SUD per 1,000 Beneficiaries with an SUD Diagnosis



Measure 6 Conclusion: Insufficient data

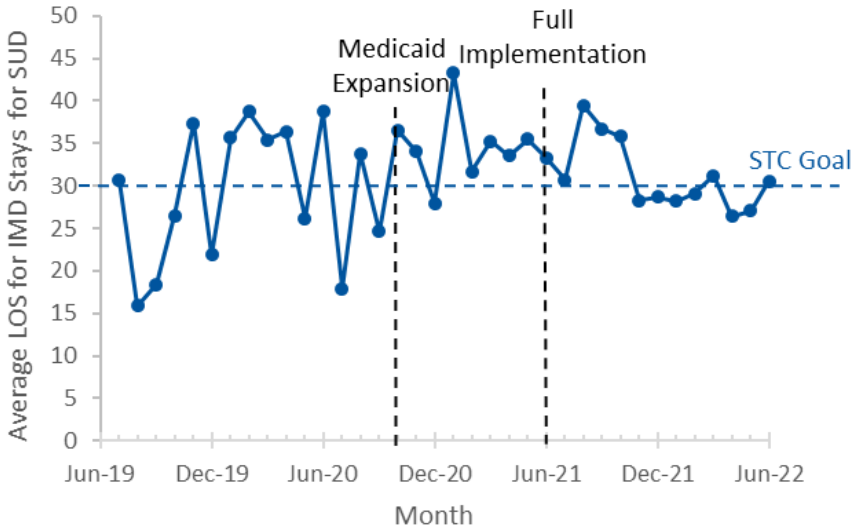
Average Length of Stay of IMD Stays for SUD (Measure 7)

Measure 7 assesses the average length of stay (ALOS) of IMD stays for SUD in Nebraska. Data for these calculations are from an MCO report on IMD stays from July 2019 to June 2022. These data were provided to HSAG as reported by each MCO, and thus could not be confirmed or independently validated.

The IMD component of the Waiver allowed Medicaid to cover IMD stays with an ALOS greater than 15-days and had a goal of an ALOS of 30 days for beneficiaries with an SUD diagnosis. Figure 5-12 shows the ALOS of IMD stays for an SUD for each month with the State goal of 30 days represented by a dashed blue line. Rates varied substantially from month to month since the initial implementation of the Waiver in July 2019 through early

2021. Between November 2021 to June 2022, the ALOS in an IMD stabilized at 28.7 days, in line with the goal of a statewide ALOS of 30 days. Although the rates fluctuated around an average of 30 days, which is in alignment with the goals of the Waiver's Special Terms and Conditions (STCs), due to the lack of pre-implementation data and a viable comparison group, these results cannot be directly attributed to the implementation of the Waiver.

Figure 5-12—Average Length of Stay of IMD Stays for an SUD



Measure 7 Conclusion: Insufficient data

Hypothesis 2: The demonstration will increase access to evidence-based SUD treatment, reflected in increased capacity.

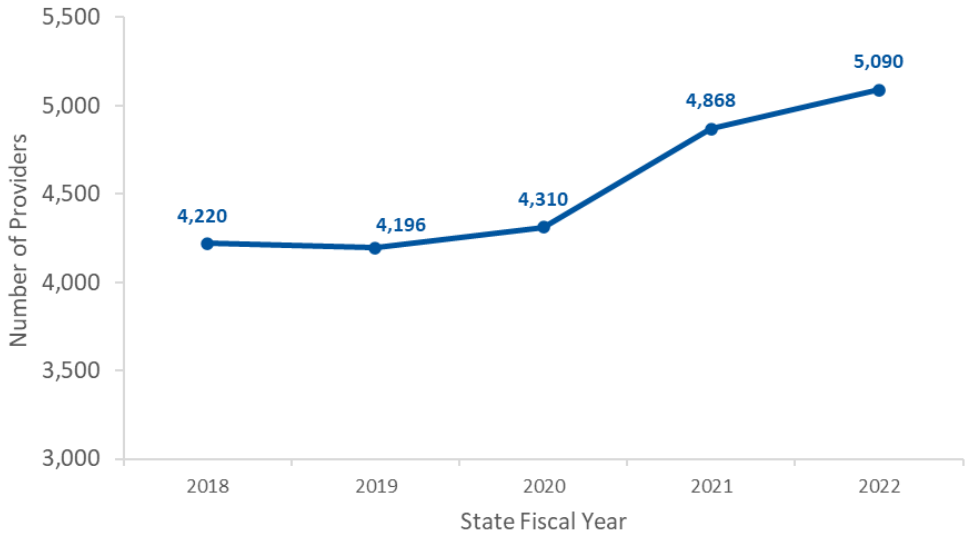
Number of Providers Enrolled in Medicaid and Who Deliver SUD Services (Measure 8)

Measure 8 seeks to determine whether the Waiver increased access to evidence-based SUD treatment, reflected in an increased number of Medicaid providers who deliver SUD services. This measure deviates slightly from the original measure name in the evaluation design, *Number of Providers Enrolled in Medicaid and Qualified to Deliver SUD Services*, to reflect that administrative claims/encounter data and provider data files were used to calculate this measure, which represents the actual counts of providers billing for SUD services. From state fiscal year (SFY) 2018 to 2022, the number of providers enrolled in Medicaid and who deliver SUD services increased each year, rising from 4,220 to 5,090 providers, a 20.6 percent increase presented in Table 5-6 and Figure 5-13. Because there was no comparison group, results presented are descriptive in nature and no causal conclusions can be drawn.

Table 5-6—Number of Providers Enrolled in Medicaid and Who Deliver SUD Services, SFY 2018—2022

	Baseline Period		Evaluation Period		
	2018	2019	2020	2021	2022
Number of Providers Enrolled in Medicaid and Who Deliver SUD Services	4,220	4,196	4,310	4,868	5,090

Figure 5-13—Number of Providers Enrolled in Medicaid and Who Deliver SUD Services, SFY 2018—2022



Measure 8 Conclusion: Supports the hypothesis

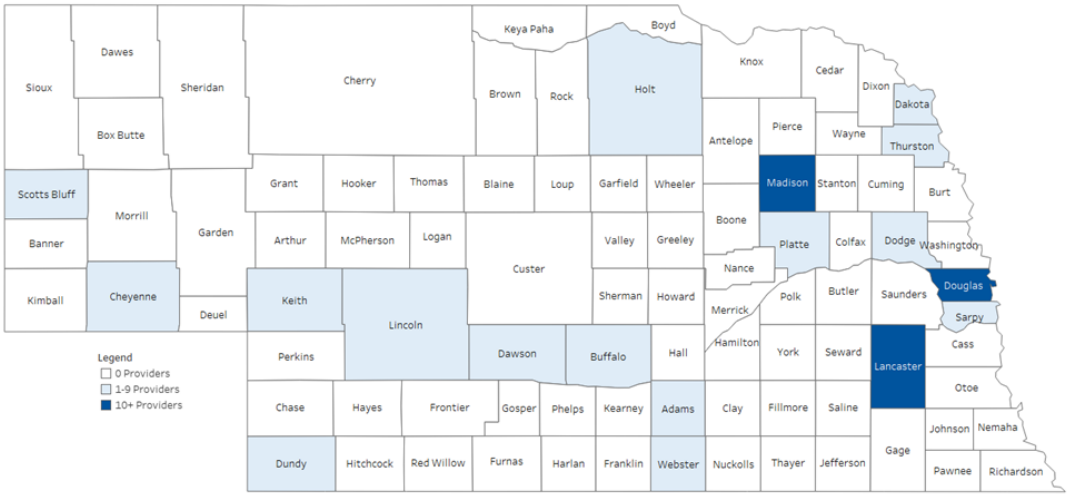
Number of Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services (Measure 9)

Measure 9 assesses whether the Waiver increased access to evidence-based SUD treatment, reflected in an increased number of Medicaid providers who deliver MAT for SUD services. As of January 3, 2023, the total number of providers enrolled in Medicaid and who deliver MAT for SUD services was 105. This number was retrieved using the most up-to-date Substance Abuse and Mental Health Services Administration (SAMHSA) provider data available.

Of the 93 counties in Nebraska, 18 counties have at least one provider who delivers MAT services for SUD. As shown in Figure 5-14 these providers are primarily located in the two most populous counties of Douglas and Lancaster, which include the cities of Omaha and Lincoln, respectively. Full results are available in Appendix A.

Because the reported rate captures only a cross-sectional snapshot of the number of providers enrolled in Medicaid and who deliver MAT for SUD services at one time point, this measure has insufficient data to make a determination of whether the results are attributable to the Waiver.

Figure 5-14—Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services by County, 2023[5-1]



Measure 9 Conclusion: Insufficient data

Number of Beds Available in IMD Facilities Providing SUD Services (Measure 10)

Measure 10 assesses the capacity of IMD facilities providing SUD services in the State of Nebraska. Data for this measure were available from March 2021 to June 2022 and were obtained from the Nebraska Mental Health Substance Use (MHSU) Center Roster, which tracks and monitors facility capacity expansions during the Waiver period. As of June 2021, at the end of the SFY 2021, a total of 594 beds were available in Nebraska IMD facilities providing SUD services. The capacity increased to 660 available beds in June 2022 at the end of SFY 2022.

Of the 93 counties in Nebraska, only seven counties reported beds in IMD facilities providing SUD services, presented in Table 5-7. Douglas County added the most beds in IMD facilities providing SUD services from June 2021 to June 2022, increasing capacity by 44 beds from 251 to 295. Hall and Platte counties did not report an increase in the number of beds, and Holt County had a decrease of one bed. In Madison County, zero beds were available in June 2021; 33 beds were added by June 2022. Lancaster County had a slight decrease in its count, falling from 171 beds in June 2021 to 155 beds in June 2022. Otoe County increased capacity by adding six additional beds by June 2022.

All data points presented were at the time of or following full implementation of the Waiver. While overall the number of beds in the State increased from June 2021 to June 2022, the lack of sufficient pre-Waiver data only allows for descriptive analyses and no causal attributions to Waiver impacts can be made.

5-1 Pottawattamie (Iowa) County borders Nebraska and contains one provider enrolled in Medicaid and delivers MAT for SUD services.

Table 5-7—Number of Beds Available in IMD Facilities Providing SUD Services, Total and by County (Measure 10)

Number of Beds by County	June 2021	June 2022
Douglas	251	295
Hall	43	43
Holt	76	75
Lancaster	171	155
Madison	0	33
Otoe County	28	34
Platte County	25	25
Nebraska (Total)	**594**	**660**

Measure 10 Conclusion: Insufficient data

Number of Outpatient Facilities Offering Detoxification (Measure 11)

Measure 11 assesses the number of outpatient (OP) facilities offering detoxification using results from the National Survey of Substance Abuse Treatment Services (N-SSATS). Data were available from 2017–2020. For comparison to national benchmarks, the ratio of facilities per 100,000 in the adult United States population aged 18 years and older was calculated. The survey reference date for each year was in late March.

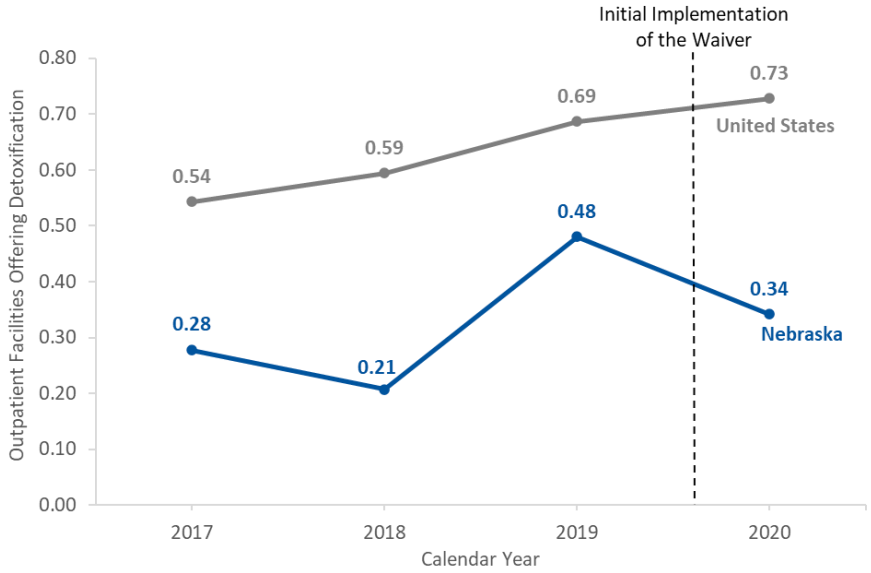
The ratio of Nebraska's OP facilities offering detoxification to its adult population varied between 2017 and 2020. While decreasing from 0.28 in 2017 to 0.21 in 2018, the rate spiked to 0.48 in 2019 when there were seven OP facilities offering detoxification. The rate then decreased to 0.34 in 2020. In comparison, the United States ratio of OP facilities offering detoxification increased each year during this period, increasing steadily from 0.54 in 2017 to 0.73 in 2020. Overall, Nebraska had fewer OP facilities providing services for detoxification relative to the size of the adult population compared to the United States average from 2017 to 2020. Because full implementation of the MAT/OTP service categories did not occur until June 2021, results presented here effectively represent the pre-implementation period. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. Measure 11 results are presented in Table 5-8 and Figure 5-15.

Table 5-8—Number of Outpatient Facilities Offering Detoxification

	Nebraska			United States		
	# of OP Facilities Offering Detox	18+ Population	# of Facilities per 100,000 Adult Residents	# of OP Facilities Offering Detox	18+ Population	# of Facilities per 100,000 Adult Residents
2017	4	1,440,013	0.28	1,366	251,400,193	0.54
2018	3	1,449,377	0.21	1,505	253,368,356	0.59
2019*	7	1,458,334	0.48	1,752	255,200,373	0.69
2020	5	1,462,537	0.34	1,869	256,662,010	0.73

*Initial implementation of the Waiver began July 1, 2019; however, full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-15—Number of Outpatient Facilities Offering Detoxification per 100,000 Adult Residents



Measure 11 Conclusion: Insufficient data

Number of Facilities Offering Opioid-Specific Detoxification (Measure 12)

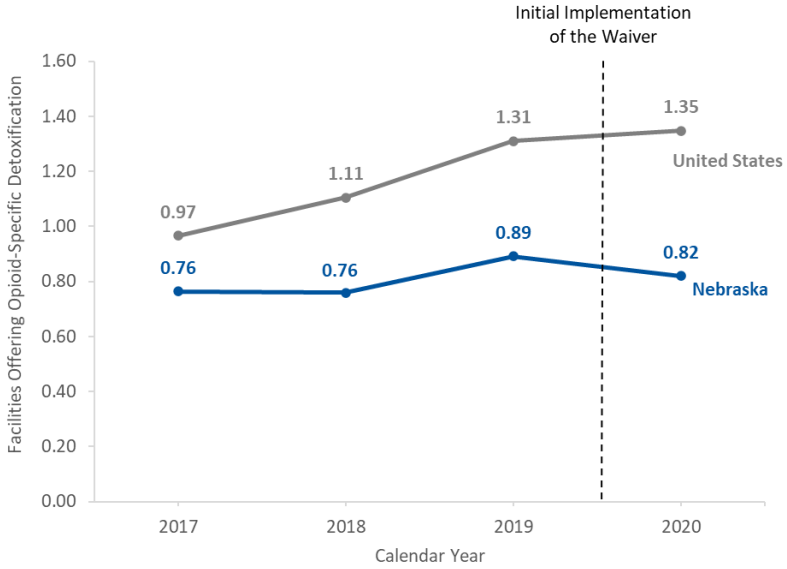
Measure 12 aims to evaluate the number of facilities offering opioid-specific detoxification. There were 0.76 facilities offering opioid-specific detoxification per 100,000 adult residents in Nebraska in 2017 and 2018. This rate increased to 0.89 in 2019 before decreasing to 0.82 in 2020. Across the United States, the rate of facilities offering opioid-specific detoxification per 100,000 adult residents increased each year from 2017 to 2020. Compared to the United States average, Nebraska consistently had fewer facilities providing opioid-specific detoxification relative to the size of the adult population across all years reported. Because full implementation of the MAT/OTP service categories did not occur until June 2021, results presented here effectively represent the pre-implementation period. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. The results for Measure 12 are presented in Table 5-9 and Figure 5-16.

Table 5-9—Number of Facilities Offering Opioid-Specific Detoxification

	Nebraska			United States		
	# of Facilities Offering Opioid-Specific Detox	18+ Population	# of Facilities per 100,000 Adult Residents	# of Facilities Offering Opioid-Specific Detox	18+ Population	# of Facilities per 100,000 Adult Residents
2017	11	1,440,013	0.76	2,430	251,400,193	0.97
2018	11	1,449,377	0.76	2,800	253,368,356	1.11
2019*	13	1,458,334	0.89	3,342	255,200,373	1.31
2020	12	1,462,537	0.82	3,459	256,662,010	1.35

*Initial implementation of the Waiver began July 1, 2019; however, full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-16—Number of Facilities Offering Opioid-Specific Detoxification per 100,000 Adult Residents



Measure 12 Conclusion: Insufficient data

Opioid Treatment Programs (Measure 13)

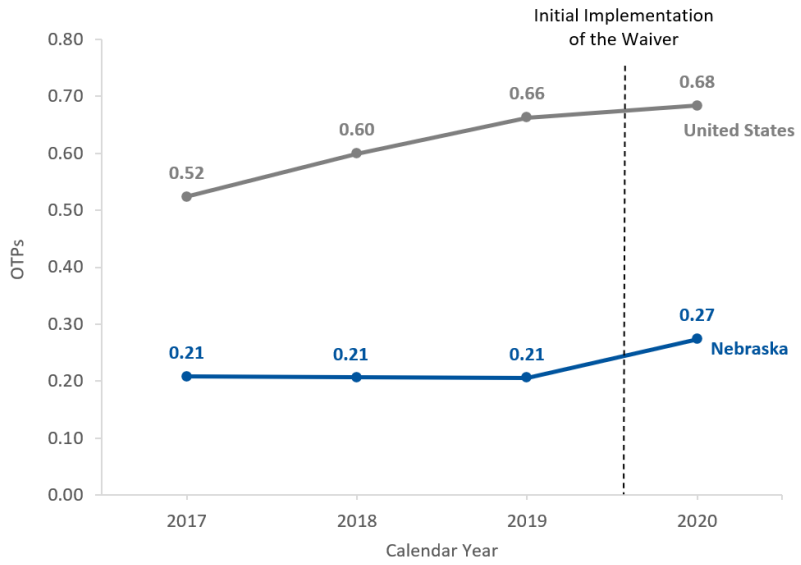
Measure 13 assesses the number of facilities with OTPs available. In Nebraska, there were three OTPs available from 2017–2019, equivalent to 0.21 per 100,000 adult residents. A fourth OTP was made available in 2020, bringing the rate to 0.27 per 100,000 adult residents. In comparison, the ratio of OTPs to 100,000 adult residents increased each year across the United States population and was consistently higher than that of Nebraska. However, as data presented here occurred before full implementation of the MAT/OTP component of the Waiver in June 2021, evidence of an increase in the number of OTPs is not expected. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. Measure 13 results are presented in Table 5-10 and Figure 5-17.

Table 5-10—Opioid Treatment Programs

	Nebraska			United States		
	# of OTPs	18+ Population	# of OTPs per 100,000 Adult Residents	# of OTPs	18+ Population	# of OTPs per 100,000 Adult Residents
2017	3	1,440,013	0.21	1,317	251,400,193	0.52
2018	3	1,449,377	0.21	1,519	253,368,356	0.60
2019*	3	1,458,334	0.21	1,691	255,200,373	0.66
2020	4	1,462,537	0.27	1,754	256,662,010	0.68

*Initial implementation of the Waiver began July 1, 2019; however, full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-17—Opioid Treatment Programs (OTPs) per 100,000 Adult Residents



Measure 13 Conclusion: Insufficient data

Outpatient Facilities Offering OTPs (Measure 14)

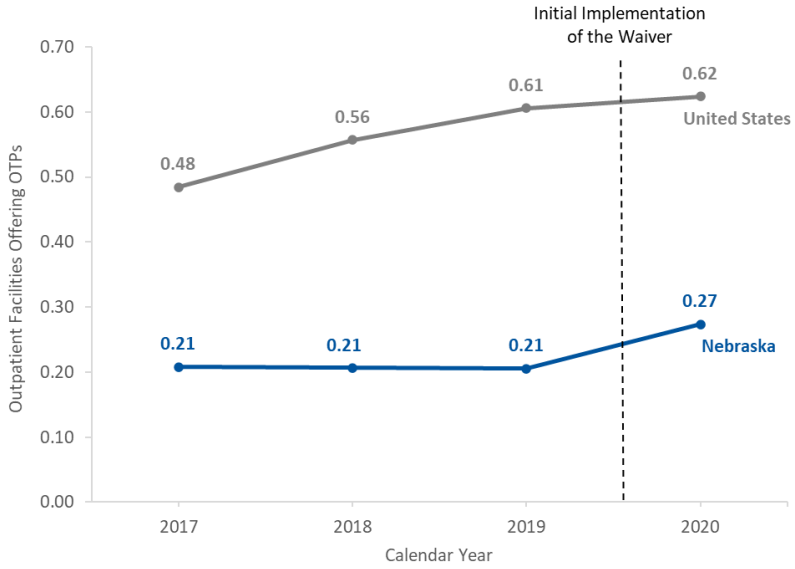
Measure 14 assesses the number of OP facilities that offer OTPs. In Nebraska, there were three OP facilities offering OTPs from 2017–2019, equivalent to 0.21 per 100,000 adult residents. A fourth OP facility offering an OTP was made available in 2020. Nebraska counts of OP facilities offering OTPs match the counts of total facilities offering OTPs as seen in Measure 13, indicating that all OTPs in Nebraska are in OP facilities. Across the United States, the ratio of OP facilities offering OTPs per 100,000 adult residents increased each year, with 0.48 in 2017 and increasing to 0.62 by 2020. This ratio was also higher than that of Nebraska for all reported years. As data reported here occurred before full implementation of the MAT/OTP component of the Waiver in June 2021, evidence of an increase in the number of OP facilities offering OTPs is not expected. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. The results for Measure 14 are displayed in Table 5-11 and Figure 5-18.

Table 5-11—Outpatient Facilities Offering Opioid Treatment Programs (OTPs)

	Nebraska			United States		
	# of OP Facilities Offering OTPs	18+ Population	# of Facilities per 100,000 Adult Residents	# of OP Facilities Offering OTPs	18+ Population	# of Facilities per 100,000 Adult Residents
2017	3	1,440,013	0.21	1,218	251,400,193	0.48
2018	3	1,449,377	0.21	1,411	253,368,356	0.56
2019*	3	1,458,334	0.21	1,546	255,200,373	0.61
2020	4	1,462,537	0.27	1,602	256,662,010	0.62

*Initial implementation of the Waiver began July 1, 2019; however, full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-18—Outpatient Facilities Offering Opioid Treatment Programs (OTPs) per 100,000 Adult Residents



Measure 14 Conclusion: Insufficient data

Residential (Non-Hospital) Facilities Offering OTPs (Measure 15)

Measure 15 assesses the number of residential (non-hospital) facilities offering OTPs. Between 2017 and 2020, Nebraska did not report any residential facilities offering an OTP. As a result, there were insufficient data available to draw any conclusions, and no comparisons were made to national data, which ranged between 0.04 and 0.06 facilities per 100,000 adult residents.

Measure 15 Conclusion: Insufficient data

Medication-Assisted Opioid Therapy Provided at Facilities with OTPs (Measure 16)

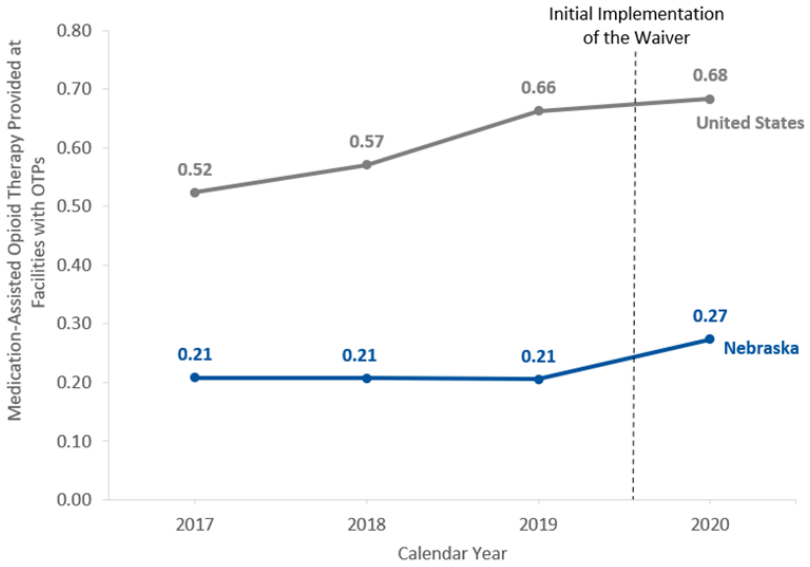
Measure 16 examines the number of facilities with OTPs that provide medication-assisted opioid therapy. In Nebraska, there were three facilities offering OTPs that provided medication-assisted opioid therapy from 2017–2019, equivalent to 0.21 per 100,000 adult residents. A fourth facility with OTPs began to provide medication-assisted opioid therapy in 2020 after the launch of the Waiver. These counts match the counts of the number of facilities offering OTPs in Nebraska as observed in Measure 13, indicating that all facilities with OTPs provided medication-assisted opioid therapy from 2017–2020. Rates in Nebraska were lower than that of the national average for each year, which increased consistently from 0.52 in 2017 to 0.68 in 2020. As data reported here occurred before full implementation of the MAT/OTP component of the Waiver in June 2021, evidence of an increase in the number of residential facilities offering OTPs is not expected. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. Results for Measure 16 are presented in Table 5-12 and Figure 5-19.

Table 5-12—Medication-Assisted Opioid Therapy Provided at Facilities with OTPs

	Nebraska			United States		
	Medication-Assisted Opioid Therapy Provided at Facilities with OTPs	18+ Population	# of Facilities per 100,000 Adult Residents	Medication-Assisted Opioid Therapy Provided at Facilities with OTPs	18+ Population	# of Facilities per 100,000 Adult Residents
2017	3	1,440,013	0.21	1,317	251,400,193	0.52
2018	3	1,449,377	0.21	1,447	253,368,356	0.57
2019*	3	1,458,334	0.21	1,691	255,200,373	0.66
2020	4	1,462,537	0.27	1,754	256,662,010	0.68

*Initial implementation of the Waiver began July 1, 2019, but full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-19—Medication-Assisted Opioid Therapy Provided at Facilities with OTPs per 100,000 Adult Residents



Measure 16 Conclusion: Insufficient data

Any Type of MAT (Measure 17)

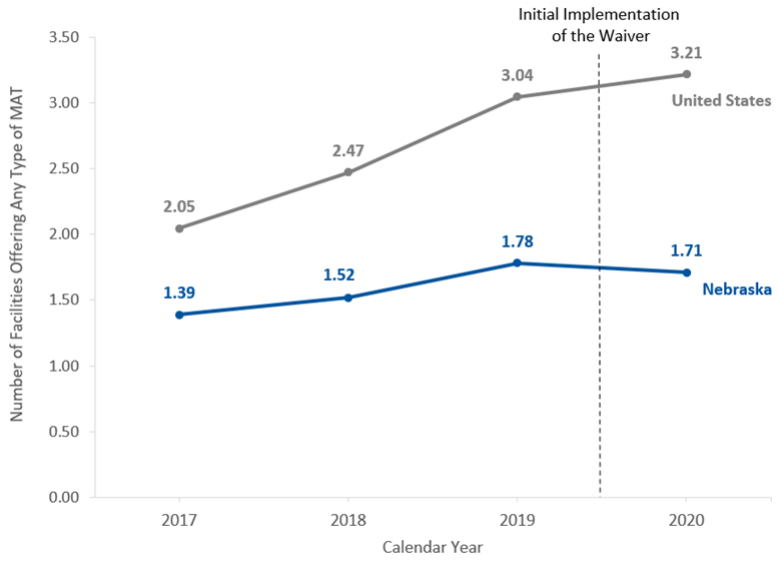
Measure 17 assesses the number of facilities that offered any type of MAT. In Nebraska, the number of facilities offering any type of MAT increased from 20 in 2017 to a peak of 26 in 2019 before decreasing to 25 in 2020. This is reflected in the ratio of facilities offering any type of MAT per 100,000 adult residents; the rate increased from 1.39 in 2017 to a peak of 1.78 in 2019 before decreasing to 1.71 in 2020. In comparison, the national average increased steadily during that timeframe from 2.05 in 2017 to 3.21 in 2020. While the number of Nebraska facilities offering any type of MAT is trending in the desired direction, all data reported here occurred before full implementation of the MAT/OTP component of the Waiver in June 2021; thus, an increase in the number of facilities offering MAT during this time period would not necessarily be expected. Full results and assessment of the Waiver's full implementation will be presented in the Summative Evaluation Report. The results for Measure 17 are displayed in Table 5-13 and Figure 5-20.

Table 5-13—Any Type of Medication-Assisted Treatment (MAT)

	Nebraska			United States		
	# of Facilities Offering Any Type of MAT	18+ Population	# of Facilities per 100,000 Adult Residents	# of Facilities Offering Any Type of MAT	18+ Population	# of Facilities per 100,000 Adult Residents
2017	20	1,440,013	1.39	5,143	251,400,193	2.05
2018	22	1,449,377	1.52	6,259	253,368,356	2.47
2019*	26	1,458,334	1.78	7,770	255,200,373	3.04
2020	25	1,462,537	1.71	8,250	256,662,010	3.21

*Initial implementation of the Waiver began July 1, 2019, but full implementation of the MAT/OTP service categories did not occur until June 2021.

Figure 5-20—Any Type of Medication Assisted Treatment (MAT) per 100,000 Adult Residents



Measure 17 Conclusion: Insufficient data

Needing But Not Receiving Treatment at a Special Facility for Illicit Drug/SUD in the Past Year (Measure 18)

Measure 18 seeks to examine the treatment gap for beneficiaries with an illicit drug or substance use disorder. Data were obtained from the National Survey on Drug Use and Health (NSDUH) Restricted-Use Data Analysis System (RDAS), with data available in year-pairs for state-level analyses. The year-pairs of data relevant to the Interim Report evaluation are 2017–2018 and 2018–2019. State estimates for 2019–2020 were not available due to SAMHSA's concerns regarding the mode of survey collection.[5-2] Estimates are inclusive of all ages surveyed, as age stratifications were not available for these data. Rates were calculated by dividing the number of respondents who needed illicit drug or SUD treatment from a specialty facility but did not receive it by the

[5-2] Substance Abuse and Mental Health Services Administration. State Data Tables and Reports From the 2019-2020 NSDUH. Available at: https://www.samhsa.gov/data/nsduh/state-reports-NSDUH-2020. Accessed on: Mar 10, 2023.

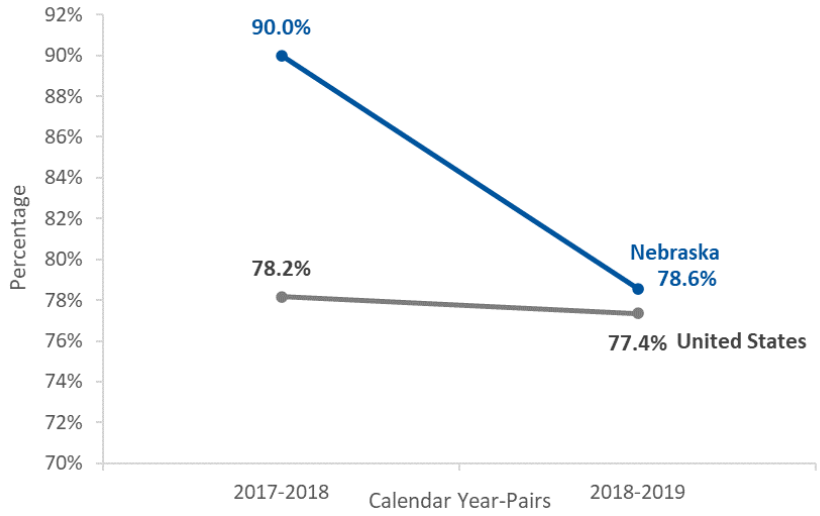
number of respondents who needed treatment. In Nebraska, 90 percent of survey respondents who needed treatment did not receive it in survey year-pair 2017–2018 and this rate decreased to 78.6 percent in 2018–2019.[5-3] Rates for the total United States population remained stable during this time, declining slightly from 78.2 percent in 2017–2018 to 77.4 percent in 2018–2019. As all data reported occurred before initial implementation of the Waiver in July 2021, there are insufficient data to make any determination of the Waiver impact. If additional data overlapping with the Waiver evaluation period become available in the future, an assessment of the Waiver's impact on this measure will be presented in the Summative Evaluation Report. Results for Measure 18 are displayed in Table 5-14 and Figure 5-21.

Table 5-14—Needing But Not Receiving Treatment at a Specialty Facility for Illicit Drug/SUD in the Past Year

	Nebraska			United States		
	Needed SUD Treatment but Did Not Receive	Needed SUD Treatment	Rate	Needed SUD Treatment but Did Not Receive	Needed SUD Treatment	Rate
2017-2018	9,000 (3,000)	10,000 (3,000)	90.0%	3,624,000 (131,000)	4,636,000 (151,000)	78.2%
2018-2019	11,000 (3,000)	14,000 (3,000)	78.6%	3,694,000 (123,000)	4,775,000 (140,000)	77.4%

Note: The numerators and denominators in this table are weighted counts to represent statewide estimates.
Standard errors are in parentheses.

Figure 5-21—Needing But Not Receiving Treatment at a Specialty Facility for Illicit Drug/SUD in the Past Year



Measure 18 Conclusion: Insufficient data

5-3 Note, please use caution when interpreting results due to small sample sizes, particularly among the Nebraska population. The counts reported do not represent the raw number of respondents. Observations are weighted so that the weighted sample represents the civilian, noninstitutionalized population for the total United States population and for each state.

Hypothesis 3: The demonstration will increase access to care for physical health conditions among beneficiaries with an SUD.

Percentage of Medicaid Beneficiaries with an SUD Who Had an Ambulatory or Preventive Care Visit (Measure 19)

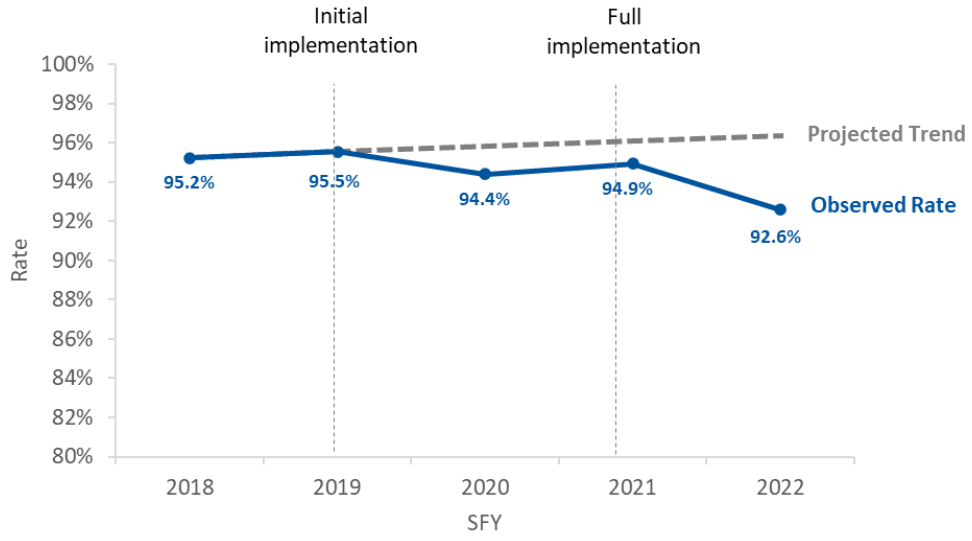
Measure 19 assesses the percentage of Medicaid beneficiaries with an SUD who had an ambulatory or preventive care visit each year. Table 5-15 and Figure 5-22 show that the observed rates of beneficiaries receiving ambulatory or preventive care services after initial implementation of the Waiver fell below the projected rates had the baseline trend continued into the Waiver period. The difference was statistically significant at the 10 percent level for SFY 2022 (p=0.062) but was not statistically significant for SFY 2020 or 2021 (p=0.108, p=0.353, respectively). This illustrates that the rate of members with an SUD receiving preventive/ambulatory health services declined relative to the outcome projected during the Waiver period; thus, results do not support the hypothesis.

Table 5-15—Percentage of Individuals with an SUD Receiving Preventive/Ambulatory Health Services

SFY	Denominator	Rate	Predicted Rate	*p*-value
2018	3,496	95.2%	--	--
2019	3,563	95.5%	--	--
2020	3,836	94.4%	95.8%	0.108
2021	5,607	94.9%	96.1%	0.353
2022	11,809	92.6%	96.4%*	0.062

*p< 0.1, **p < 0.05, ***p<0.001
Note: "–" represents numbers that cannot be calculated or are not applicable.

Figure 5-22—Percentage of Individuals with an SUD Receiving Preventive/Ambulatory Health Services



Measure 19 Conclusion: Does not support the hypothesis

Key Informant Interview Responses

State administrators, MCOs, and provider informants commented on how the Waiver increased access to healthcare for beneficiaries with an SUD, including:

- Member access to services expanded with the coverage of OTP, MAT, and American Society of Addiction Medicine (ASAM) Level 3.7 services under Medicaid.
  - MCOs worked with existing OTP and residential providers to expand ASAM Level 3.7 services and recruited new providers to add services covered by the Waiver to their portfolio.
- Patients accessed services they were unable to access before the Waiver.
  - Providers noted that patients experienced relief knowing they would not be billed for receiving necessary care.
- Providers no longer turned Medicaid patients away from needed care due to services not being covered.
- Patients avoided waitlists for care due to direct coverage of services under Medicaid.
- Stays in IMDs were covered for the Medicaid expansion population.

A common challenge discussed by State administrators, MCOs, and providers was Nebraska's diverse urban and rural environments. Informants commented on difficulties experienced by beneficiaries accessing providers in rural and frontier areas, specifically, the need to travel long distances to receive treatment services in western Nebraska due to most providers practicing on the eastern side of the State. Informants additionally shared:

- Rurality clearly contributed to gaps in access to care.
  - Patients traveled long distances from western Nebraska to reach detoxification centers that accepted Medicaid.
  - In some cases, treatment services in Kansas and Colorado were the closest options for patients in western Nebraska; however, these states would not accept Nebraska Medicaid to treat an SUD.
  - Patients could find recovery housing to step down into in the largest city, Omaha, but could not find the same resources in the second largest city, Lincoln.
  - A lack of overseeing physicians in rural areas prevented the prescription of MAT.
  - Patients drove long distances to receive care that may not have been at the appropriate ASAM level simply because no other options existed.
- Targeted approaches to provide care in rural communities had mixed results.
  - Providers used telehealth to deliver care to rural patients; however, poor Internet access was often a barrier to successful utilization of the delivery platform.
  - MCOs increased their efforts to aid rural communities by focusing on identification of these areas with gaps in access to care.
  - State administrators expressed concern about the distribution of knowledge of the Waiver in rural areas, commenting that beneficiaries were unable to utilize services they did not know existed.

A chief concern among MCOs was the general lack of demand for SUD treatment services in Nebraska. According to the MCOs, Nebraska had not experienced the large impact of the opioid crisis compared to other states across the country. The lack of demand for opioid services resulted in:

- A lack of willingness among providers to invest in and expand their workforce and capacity to serve SUD and opioid use disorder (OUD) members or include the new OTP and MMIW services covered by the Waiver.
  - Providers hesitated to deliver opioid services if they would not break even financially due to low demand.
  - Use of alcohol and methamphetamines were more prevalent; therefore, more providers were equipped to treat these issues compared to opioids.
- Active attempts by MCOs to recruit new providers to deliver Waiver services to increase the number of providers available.
  - MCOs targeted known SUD providers to cover the higher levels of ASAM newly reimbursable through the Waiver, as well as providers new to both SUD treatment and Medicaid.

One MCO noted that it did not believe that beneficiaries lacked access to SUD treatment services because of the unavailability of providers interested in SUD treatment services due to the low demand for the service. A second MCO remarked that if demand were to grow and return on investment potential increased, there would be no barriers to growing provider capacity.

The COVID-19 PHE resulted in challenges providing access to healthcare throughout the Waiver. There was an initial drop in the availability of services due to the PHE. Social distancing resulted in decreased capacity due to limits on how many individuals could be in an area or building at one time. The requirement for a negative COVID-19 test became a barrier to care as patients waited for test results to arrive and were unable to receive care if they tested positive. Due to COVID-19, existing patients in ASAM 3.5 residential shelters were not stepping down into lower levels of care. As a result, at the beginning of COVID-19 new patients could not enter ASAM 3.5 residential shelters.

Additional comments made on the impact to access to care included:

- The Waiver did not negatively impact the availability of or access to pre-existing SUD services or ASAM levels of care, as no providers chose to remove any pre-existing ASAM levels to provide ASAM Level 3.7 services.
- Access did not expand at one provider's organization because the Waiver did not have a direct effect on expanding Medicaid eligibility.
- Expanding the provider's service portfolio and increasing access to care is still an ongoing process.
  - One provider shared plans to provide intensive outpatient (IOP) services in the near future.
- State informants noted it was difficult to distinguish between the impact of the Waiver and the impact of the Medicaid expansion, as Medicaid expansion increased the number of beneficiaries MCOs were able to serve simultaneously with the rollout of the Waiver.

A complete summary of key informants' interview responses can be found in Appendix D.

Aim Two: Improve Quality of Care for Beneficiaries With an SUD

Evaluation Question 1: Did the demonstration improve the quality of SUD treatment?

Hypothesis 1: The demonstration will improve rates of identification, initiation, and engagement in treatment for SUD.

Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis (Measure 20)

Measure 20 assesses whether the Waiver has increased the rate of members with a new SUD diagnosis who initiated treatment for SUD within 14 days. For the non-expansion beneficiaries, rates declined during the baseline period and worsened during initial implementation of the Waiver by 0.18 percentage points per month compared to the projected rates had the baseline continued, a decline that was not statistically significant (p=0.121). Following full implementation after the addition of MAT/OTP services, rates continued to worsen by 0.34 percentage points per month compared to the projected rates had the initial implementation trend continued, a statistically significant change (p=0.029). The COVID-19 PHE appeared to have little impact on rates for this measure, with a slight dip occurring in the observed rates in June 2020.

Based on the overall decrease in the rates from baseline through full implementation of the Waiver and the significant worsening of rates each month in the full implementation period compared to the projected rates had the initial implementation trend continued, this measure does not support the hypothesis that the Waiver will improve rates of initiation in treatment for members with a new SUD diagnosis within 14 days.

Table 5-16 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-23 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and implementation trend (grey dashed lines) continued. Figure 5-24 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to May 2022.

Table 5-16—ITS Results (Measure 20, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	46.34p.p.***	<0.001	46.53p.p.***	<0.001
Baseline monthly trend	-0.14p.p.	0.115	-0.15p.p.*	0.082
Level change at initial implementation	1.99p.p.	0.416	2.26p.p.	0.363
Change in monthly trend – initial implementation	-0.18p.p.	0.121	-0.19p.p.	0.105
Level change at full implementation	2.05p.p.	0.177	1.18p.p.	0.394
Change in monthly trend – full implementation	-0.34p.p.**	0.029	-0.31p.p.	0.221

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-23—Illustration of ITS Analysis (Measure 20, Non-Expansion and Total Population)

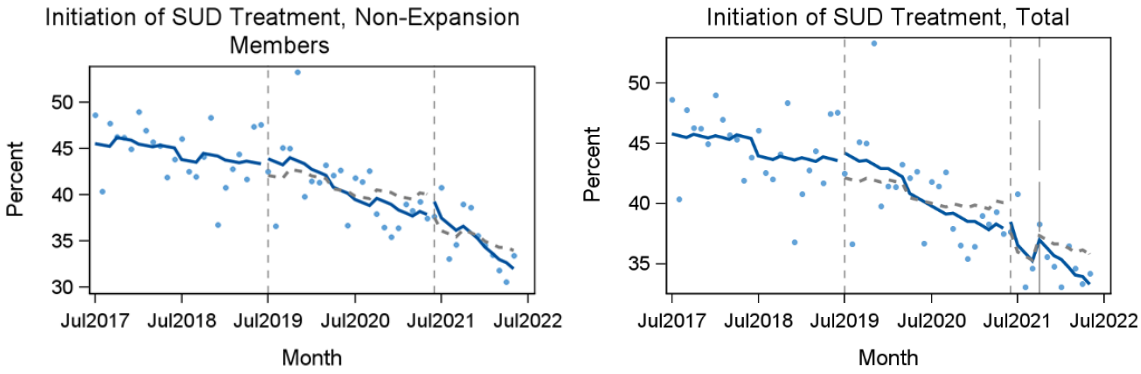
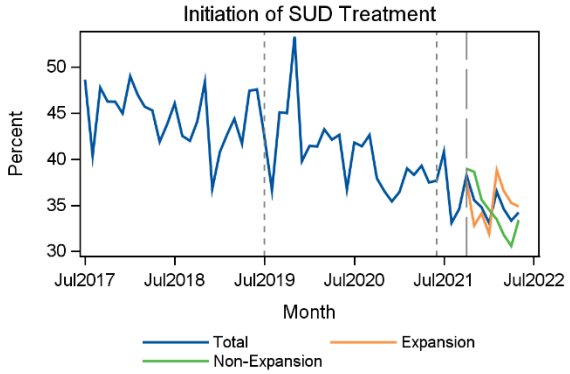


Figure 5-24—Measure 20 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 20 Conclusion: Does not support the hypothesis

Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit (Measure 21)

Measure 21 assesses whether the Waiver increased rates of engagement in SUD treatment by assessing the percentage of beneficiaries with a new SUD diagnosis who had two or more claims for SUD treatment within 34 days. Overall, rates for this measure were highly variable throughout the baseline and evaluation periods, ranging between approximately 4 percent and 9 percent. Compared to National Committee for Quality Assurance (NCQA) National Benchmarks for 2022, rates for the non-expansion population consistently fell beneath the 33rd percentile, with rates often falling under the 10th percentile. The baseline trend for the non-expansion group declined slightly before showing a non-statistically significant improvement in the initial implementation period of 0.10 percentage points per month compared to projected rates had the baseline trend continued (p=0.111). However, the trend in the full implementation period exhibited a statistically significant decline of 0.24 percentage points per month compared to projected rates had the initial implementation period continued (p=0.047). Given the variability in the rates, additional data points will allow for a better assessment of the full implementation trend in the Summative Evaluation Report.

Based on the overall improvement in the rates during the initial implementation period and the significant worsening in the full implementation period compared to projected rates had the initial implementation period

continued, this measure neither supports nor fails to support the hypothesis that the Waiver improved rates of engagement in SUD treatment. Table 5-17 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-25 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-26 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to May 2022.

Table 5-17—ITS Results (Measure 21, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	7.05p.p.***	<0.001	7.13p.p.***	<0.001
Baseline monthly trend	-0.05p.p.	0.199	-0.05p.p.*	0.093
Level change at initial implementation	-0.06p.p.	0.942	0.11p.p.	0.885
Change in monthly trend – initial implementation	0.10p.p.	0.111	0.09p.p.*	0.099
Level change at full implementation	2.10p.p.	0.254	1.75p.p.	0.191
Change in monthly trend – full implementation	-0.24p.p.**	0.047	-0.59p.p.**	0.001

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-25—Illustration of ITS Analysis (Measure 21, Non-Expansion and Total Population)

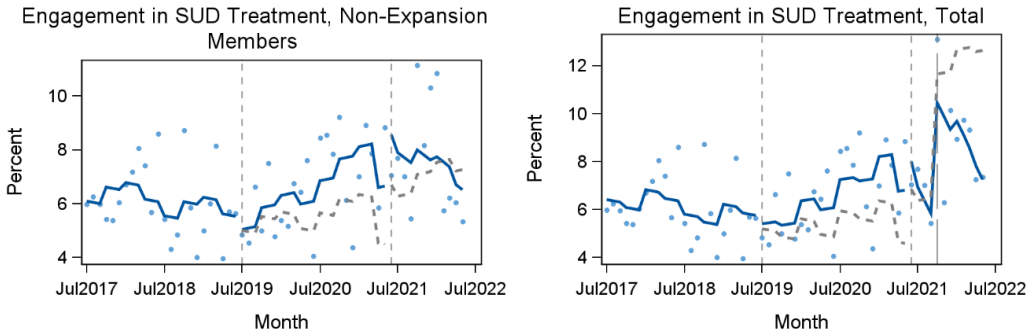
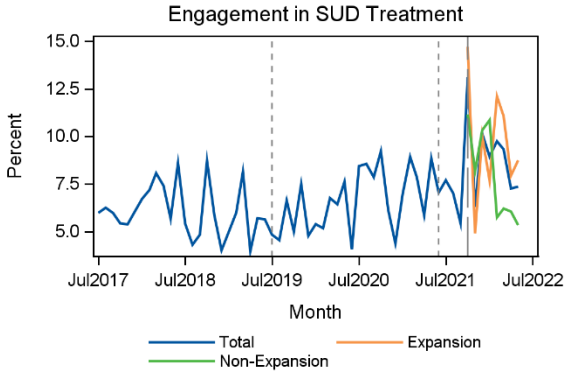


Figure 5-26—Measure 21 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 21 Conclusion: Neither supports nor fails to support the hypothesis

Hypothesis 2: The demonstration will improve rates of adherence to and retention in treatment for SUD.

Continuity of Pharmacotherapy for OUD (Measure 22)

Measure 22 assesses whether the Waiver has improved rates of adherence to and retention in treatment for SUD by determining the percentage of beneficiaries receiving MAT for OUD with at least 180 days of continuous treatment.[5-4]

Prior to the initial implementation period, baseline rates declined by 0.72 percentage points per month. However, after initial implementation of the Waiver, the monthly trend increased by 0.31 percentage points compared to projected rates had the baseline trend continued, though this change was not statistically significant (p= 0.375). After the full implementation with the addition of MAT/OTP services, the monthly trend in the full implementation period increased by 2.97 percentage points compared to the projected rates had the initial implementation trend continued. This was a statistically significant result (p=0.030). These increases in the trend also coincided with increases of the level change during the initial implementation and full implementation, though only the increase in level change during the initial implementation was statistically significant at the 10 percent level (p=0.073).

Data for the expansion group were only available for October 2021 through December 2021, and no significant changes were observed during this period.

Based on the statistically significant findings of the increased level change at initial implementation and the increased change in monthly trend in the full implementation compared to the initial implementation among non-expansion members, this measure supports the hypothesis that the Waiver will improve rates of adherence to and retention in treatment for SUD.

Table 5-18 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-27 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-28 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to December 2021.

Table 5-18—ITS Results (Measure 22, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	30.75p.p.***	<0.001	30.43p.p.***	<0.001
Baseline monthly trend	-0.72p.p.**	0.006	-0.69p.p.**	0.008
Level change at initial implementation	9.68p.p.*	0.073	8.89p.p.	0.101
Change in monthly trend – initial implementation	0.31p.p.	0.375	0.34p.p.	0.346
Level change at full implementation	8.94p.p.	0.280	13.11p.p.	0.119
Change in monthly trend – full implementation	2.97p.p.**	0.030	0.36p.p.	0.874

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

5-4 To allow for the 180-day follow-up period, rates were not calculated for treatments beginning in January 2022 through December 2022.

Figure 5-27—Illustration of ITS Analysis (Measure 22, Non-Expansion and Total Population)

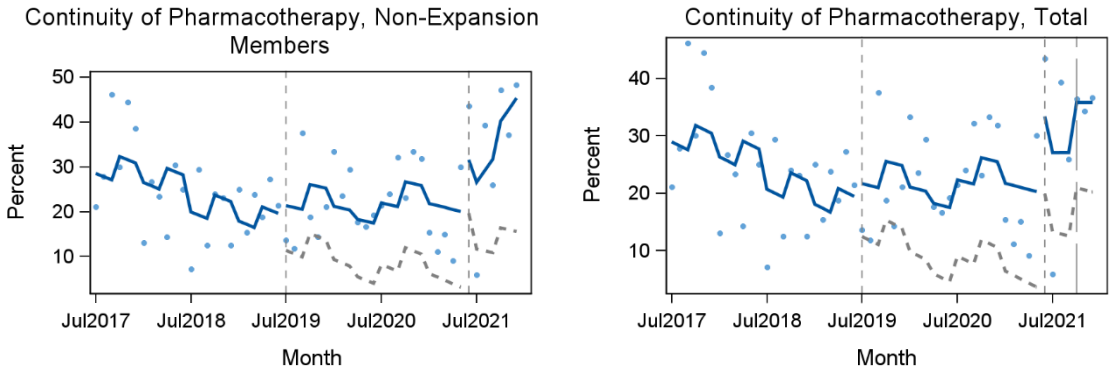
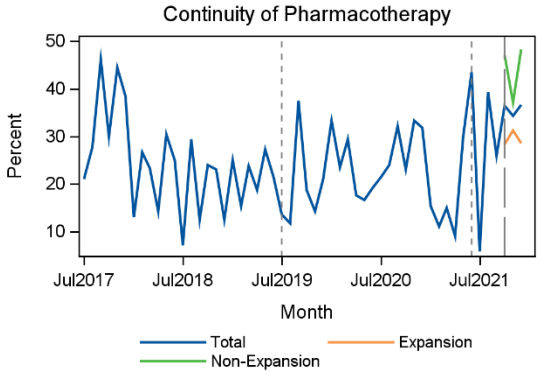


Figure 5-28—Measure 22 Trend Over Time; Non-Expansion, Total and Expansion Populations



Measure 22 Conclusion: Supports the hypothesis

Hypothesis 3: The demonstration will reduce ED use for SUD.

Average Number of ED Visits for SUD (Measure 23)

Measure 23 assesses emergency department (ED) utilization for an SUD among beneficiaries to assess if the Waiver has reduced the number of ED visits for SUD. Baseline rates increased by 0.02 visits per 1,000 beneficiaries per month. During the initial implementation period, rates increased by 0.02 visits per 1,000 beneficiaries per month compared to projected rates had the baseline trend continued, though this was not a statistically significant finding (p=0.155). At the time of full implementation of the Waiver, which added services for MMIW and MAT/OTP, there was a statistically significant downward shift of 0.78 visits per 1,000 members. Additionally, the change in monthly trend decreased by 0.14 visits per 1,000 members per month compared to the projected trend from the initial implementation period, a statistically significant decline (p<0.001). These decreases may have been driven by the increased availability of OTPs and facilities providing MAT statewide after the Waiver's full implementation and resulting in less reliance on EDs for SUD.

Based on the statistically significant decrease in the level change at full implementation and in the full implementation rates compared to projected rates had the initial trend continued, this measure supports the hypothesis that the Waiver will reduce ED visits for SUD.

Figure 5-29 illustrates the model-based average in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-19 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-30 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to June 2022.

Table 5-19—ITS Results (Measure 23, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	5.59***	<0.001	5.59***	<0.001
Baseline monthly trend	0.02	0.211	0.02	0.226
Level change at initial implementation	0.31	0.212	0.32	0.203
Change in monthly trend – initial implementation	0.02	0.155	0.02	0.162
Level change at full implementation	-0.78**	0.029	-0.91**	0.023
Change in monthly trend – full implementation	-0.14***	<0.001	-0.09**	0.037

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-29—Illustration of ITS Analysis (Measure 23, Non-Expansion and Total Population)

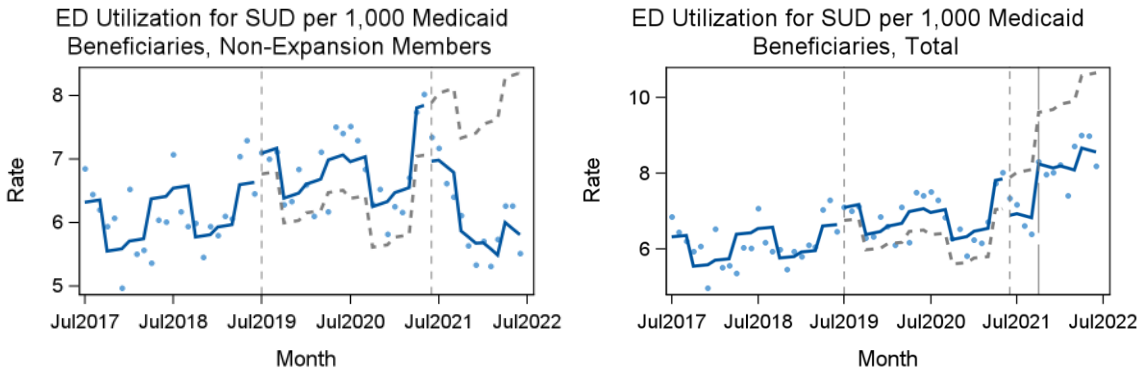
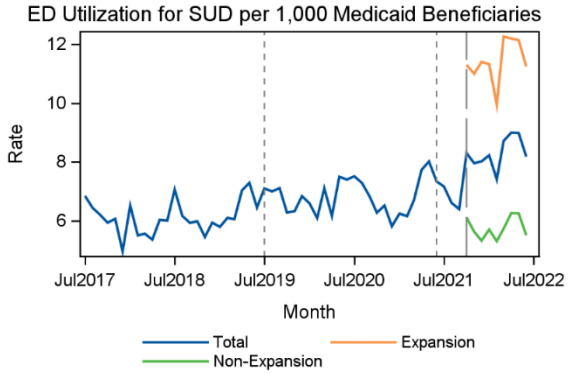


Figure 5-30—Measure 23 Trend Over Time; Non-Expansion, Total and Expansion Populations



Measure 23 Conclusion: Supports the hypothesis

Hypothesis 4: The demonstration will reduce readmissions for SUD.

30-Day Readmission (Measure 24)

Measure 24 seeks to determine whether the Waiver reduced readmissions for SUD by assessing the percentage of readmissions within 30 days of an IP stay among beneficiaries with an SUD. For non-expansion beneficiaries, the baseline trend was decreasing by 0.09 percentage points per month. The initial implementation trend worsened by 0.21 percentage points per month compared to projected rates had the baseline trend continued, a statistically significant finding (p=0.009). However, following full implementation of the Waiver, the trend improved by 0.17 percentage points per month compared to projected rates had the initial implementation trend continued (p=0.491).

Notably, rates for 30-day readmissions for an SUD increased during the peak of the COVID-19 PHE, particularly in April and May 2020. Additionally, rates for the expansion population were consistently lower throughout the full implementation period compared to the non-expansion population.

Based on the significant increase in rates during the initial implementation period for the non-expansion group compared to projected rates had the baseline trend continued, this measure does not support the hypothesis that the Waiver will reduce readmissions for beneficiaries with an SUD. The improvement in the change in monthly trend for the full implementation period compared to the initial implementation period is promising, but additional data points will be needed to evaluate further.

Figure 5-31 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-20 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-32 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to May 2022.

Table 5-20—ITS Results (Measure 24, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	25.37p.p.***	<0.001	25.07p.p.***	<0.001
Baseline monthly trend	-0.09p.p.	0.105	-0.10p.p.**	0.034
Level change at initial implementation	0.16p.p.	0.877	0.54p.p.	0.568
Change in monthly trend – initial implementation	0.21p.p.**	0.009	0.20p.p.**	0.005
Level change at full implementation	-2.00p.p.	0.224	-2.25p.p.	0.114
Change in monthly trend – full implementation	-0.17p.p.	0.491	-0.39p.p.	0.139

*p< 0.1, **p < 0.05, ***p<0.001
p.p. = percentage point
Note: Full model results are presented in Appendix A.

Figure 5-31—Illustration of ITS Analysis (Measure 24, Non-Expansion and Total Population)

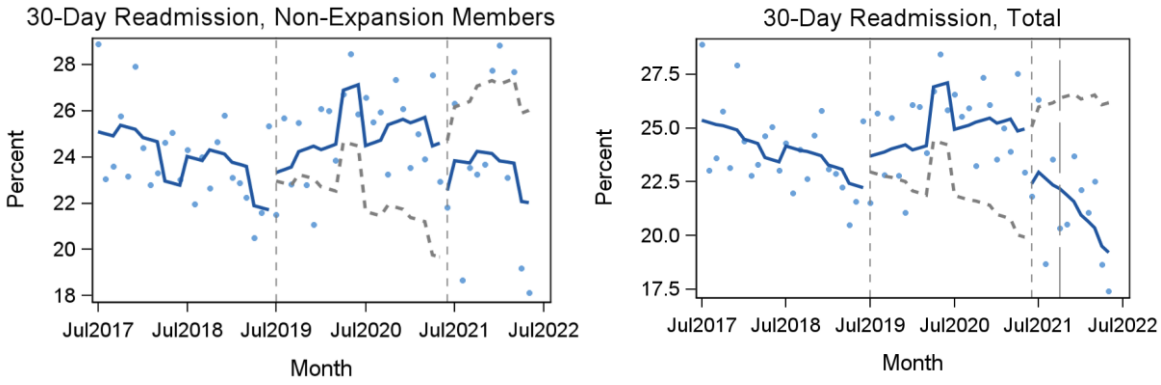
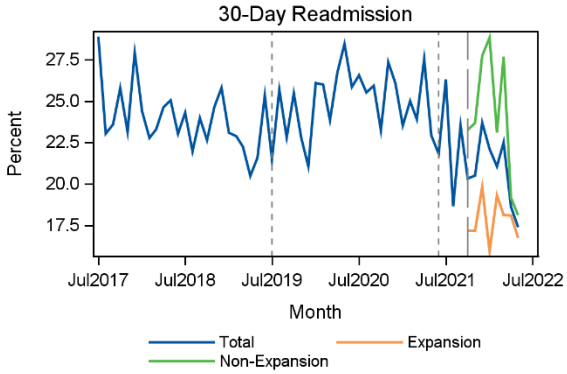


Figure 5-32—Measure 24 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 24 Conclusion: Does not support the hypothesis

Hypothesis 5: The demonstration will reduce overdose deaths, particularly those due to opioids.

Rate of Overdose Deaths, Overall and Due to Opioids (Measure 25)

Measure 25 aims to determine whether the Waiver has reduced the rate of overdose deaths overall, particularly those due to opioids. Using data obtained from the Centers for Disease Control and Prevention (CDC) Wide-ranging Online Data for Epidemiologic Research (WONDER) system, the total number and rates of all overdose deaths and opioid-specific overdose deaths were calculated for Nebraska and United States residents. Data on Medicaid recipients specifically were not available. For Nebraskans statewide, both the rate of overdose deaths overall and the rate of opioid-specific overdose deaths increased from calendar year 2017–2020, rising from 12.1 to 17.6 overdose deaths overall per 100,000 Nebraskans and from 4.8 to 8.1 opioid-specific overdose deaths per 100,000 Nebraskans. During this time, the proportion of overdose deaths attributable to opioids among Nebraskans increased from to 39.7 percent to 45.7 percent. Although overdose deaths remained relatively unchanged between 2017 and 2019, a more pronounced increase in the rate of overdose deaths occurred between

2019 and 2020. The increased rate of overdose deaths was likely exacerbated by the COVID-19 PHE, and may be due to reduced access to healthcare and recovery support services.[5-5, 5-6, 5-7]

Nationwide, overdose deaths overall and specifically due to opioids followed a similar trend from 2017–2020. Overdose deaths rose from 35.2 to 45.2 per 100,000 United States residents and opioid-specific overdose deaths rose from 23.1 to 33.0 per 100,000 United States residents. The proportion of overdose deaths attributable to opioids among United States residents increased from 68.9 percent to 75.9 percent between 2017–2020. Similar to Nebraska, the overall and opioid-specific death rates fluctuated slightly prior to 2020 and increased from 2019 to 2020, which was primarily driven by the COVID-19 PHE. [5-8]

The rates of overdose deaths nationwide were overall higher than those of Nebraska from 2017–2020. Even though the United States overdose rate was much higher than the rate reported in Nebraska, the Nebraska population experienced a greater relative increase in the rate of overdose deaths compared to the United States population between 2019 and 2020. The average rates of overdose death among Nebraskans between 2017 and 2019 were 65 percent lower than the national rates. However, the Nebraska overdose rate increased by 37.5 percent between 2019 and 2020 compared to a 29.5 percent increase in overdose deaths nationwide during the same time period. This difference suggests that the COVID-19 PHE may have had a disproportionate impact on Nebraskans compared to all United States residents.

Table 5-21 and Figure 5-33 below show the yearly overall and opioid-specific overdose deaths with associated mortality rates per 100,000 Nebraska and United States residents, and the proportion of overdose deaths attributable to opioids.

The increasing trend in the rate of overall overdose deaths and opioid-specific overdose deaths in Nebraska from 2017 to 2020 indicates that this measure does not support the hypothesis; however, these results may be largely impacted by the COVID-19 PHE.

5-5 Centers for Disease Control and Prevention. Overdose Deaths Accelerating During COVID-19. Available at: https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html. Accessed on: Mar. 7, 2023.

5-6 Ghose R, Forati AM, Mantsch JR, *et al*. "Impact of the COVID-19 Pandemic on Opioid Overdose Deaths: a Spatiotemporal Analysis." *J Urban Health* 99(2). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8856931/. Accessed on: Mar. 7, 2023.

5-7 Indian Health Service. Opioids and the COVID-19 Pandemic. Available at: https://www.ihs.gov/opioids/covid19/. Accessed on: Mar. 7, 2023.

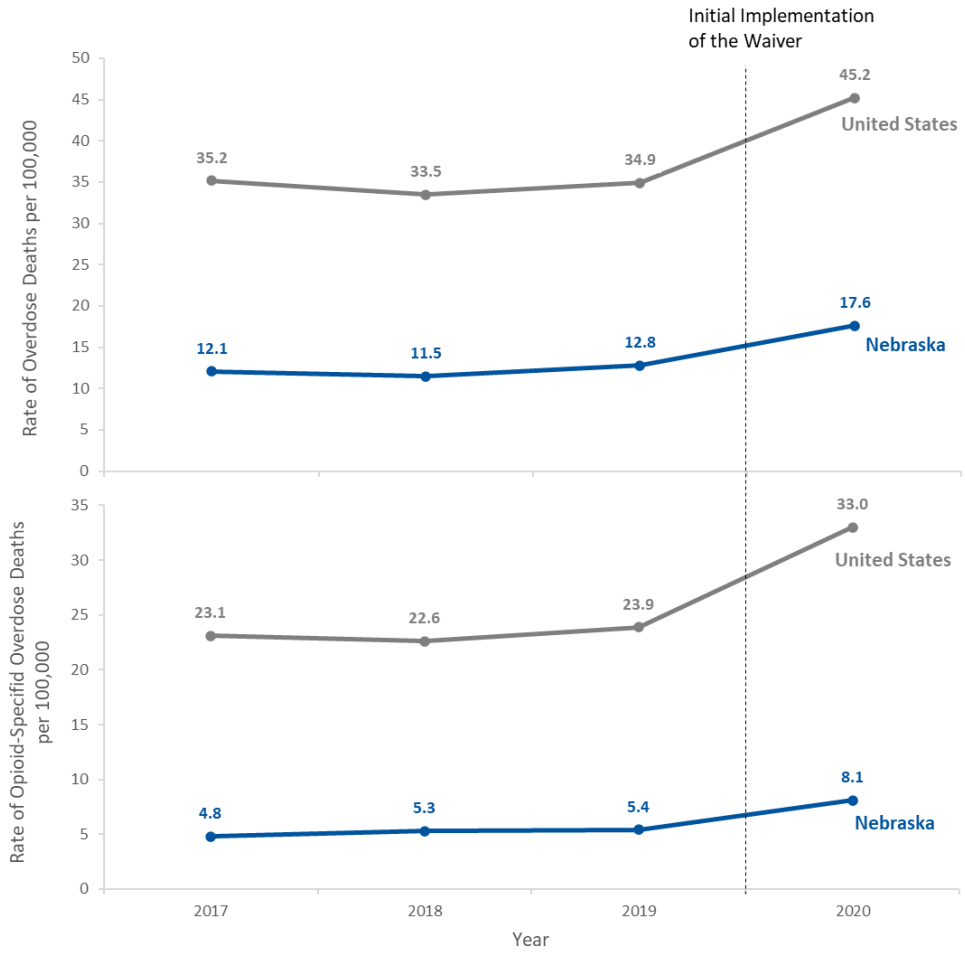
5-8 Centers for Disease Control and Prevention. Overdose Deaths Accelerating During COVID-19. Available at: https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html. Accessed on: Mar. 7, 2023.

Table 5-21—Rate of Overall and Opioid-Specific Overdose Deaths (Measure 25)

Nebraska	2017	2018	2019*	2020
Overdose Deaths, All – Count	136	129	143	197
Overdose Deaths, All – Mortality Rate per 100,000	12.1	11.5	12.8	17.6
Overdose Deaths, Opioid	54	59	60	90
Overdose Deaths, Opioid – Mortality Rate per 100,000	4.8	5.3	5.4	8.1
Proportion of Overdose Deaths Attributable to Opioids	39.7%	45.7%	42.0%	45.7%
Population*	1,123,572	1,122,832	1,120,149	1,117,572
United States	**2017**	**2018**	**2019***	**2020**
Overdose Deaths, All – Count	66,132	62,835	65,519	85,417
Overdose Deaths, All – Mortality Rate per 100,000	35.2	33.5	34.9	45.2
Overdose Deaths, Opioid	45,548	44,435	47,149	64,874
Overdose Deaths, Opioid – Mortality Rate per 100,000	23.1	22.6	23.9	33
Proportion of Overdose Deaths Attributable to Opioids	68.9%	70.7%	72.0%	75.9%
Population**	196,963,895	197,017,177	196,886,283	196,842,788

*Initial implementation of the Waiver began July 1, 2019.
**Includes only ages 19–64

Figure 5-33—Rates of Overall and Opioid-Specific Overdose Deaths (Measure 25)



Measure 25 Conclusion: Does not support the hypothesis

Key Informant Interview Responses

State administrators, MCOs, and providers commented on how the Waiver increased the quality of healthcare for beneficiaries with an SUD. State administrators highlighted the changes in the continuum of care the State provided clearly as a result of the Waiver and the Medicaid coverage of OTP and MAT. According to providers, the reduced delays in receiving care increased positive engagement with the patient and success in treatment. Examples provided by informants included the ability to:

- Administer drugs in new settings for different durations.
- Offer "mid-level" services to patients who need more assistance than OP providers can provide, but who do not require ED or IP treatment.
- Improve care coordination, including between providers and MCOs, and transitions between levels of care.
- Expand facilities by providing reimbursement for services through the Waiver.

- Increase support for minority patients in their treatment processes through engagement with 12-step programs and through building relationships with community-based providers and utilizing care managers.
- Implement comprehensive treatment and prevention strategies.

During the beginning of implementation of the Waiver, informants noted gaps in the continuum of care, sharing:

- A lag between when patients arrived for treatment and when they began receiving treatment due to time required to complete intake paperwork.
- Difficulty alerting and educating providers about new services.
- A desire to see the monitoring process of high utilizers of SUD be further strengthened and expanded.
  - For example, case managers often spent time locating placements for patients whereas, with strengthened resources, they could be more focused on patient care.

Providers noted concerns about reauthorizations disrupting appropriate treatment. Providers shared that Medicaid often did not reapprove patients to remain in the appropriate level of care if the patient did not appear to make progress according to MCOs' definitions. According to providers, MCOs did not take transition time or the patient's personal situations into account, such as a criminal background or mental health issues, which might slow individuals' progress in their treatment program. As a result, patients were transitioned to lower levels of care against the recommendation of their providers. Providers believed this contributed to patient recidivism. One provider noted that frequent reauthorizations were not required under the previous region funding structure.

Additional challenges preventing an increase in quality of care noted by single informants were:

- Facilities with multiple provider types did not always accept individuals with an SUD because the facility did not meet the Waiver's MMIW criteria.
- Providers felt uncomfortable prescribing methadone and lacked experience in methadone treatment.
- No clear pre-existing managed care model resulted in the Nebraska Department of Health and Human Services (DHHS) working the Centers for Medicare & Medicaid Services (CMS) to create a managed care model.
- Credentialing providers to deliver ASAM Level 3.7 services.
  - A considerable amount of time was spent assisting providers in understanding new services, including ASAM Level 3.7, and what was required to receive the proper credentials to provide those services.
  - Providers struggled with the IP accreditation criteria associated with ASAM Level 3.7.
  - An MCO experienced backlogs in credentialing providers.

The COVID-19 PHE shifted care delivery from in-person to telehealth, affecting the quality of care received. Several providers shared that patient care was negatively impacted. One provider noted that patients in 12-step programs who shifted to a virtual setting received less support upon exit from the program than they would have in-person. A second provider cited a lack of accountability for patients receiving telehealth services; during the providers' temporary residential treatment shutdown in 2020 when telehealth was used, the provider experienced an unprecedented number of patients not attending appointments. A third provider highlighted the monetary costs incurred by adding proper security measures to video conferencing platforms for healthcare utilization. Other providers shared that telehealth was a benefit to their practice. For several, their first experience using telehealth

to deliver care occurred during the COVID-19 PHE. Providers noted that telehealth made the care experience easier for patients.

A complete summary of key informants' interview responses can be found in Appendix D.

Aim Three: Maintain or Reduce Costs

Evaluation Question 1: Did the demonstration maintain or reduce total cost of care?

Hypothesis 1: The demonstration will reduce inpatient hospitalization and ED use for SUD.

Average Number of Inpatient Stays for SUD (Measure 26)

Measure 26 assesses whether the Waiver reduced IP hospitalization for SUD by looking at the number of IP stays with an SUD diagnosis among beneficiaries ages 19–64. The rate of IP stays with an SUD diagnosis among non-expansion beneficiaries followed a downward trajectory during the measurement period, decreasing from 4.1 stays per 1,000 beneficiaries in July 2017 to 1.8 stays per 1,000 beneficiaries in June 2022. There was no change in the monthly trend of stays per 1,000 beneficiaries during the initial implementation period compared to the baseline period (p=0.773). There was a statistically significant (p=0.033) increase of 0.37 stays per 1,000 beneficiaries in the level change at initial implementation when the Waiver allowed for coverage of all IMD stays regardless of length. However, the change in monthly trend decreased at full implementation with the addition of MAT/OTP programs compared to the projected rates had the trend from initial implementation continued, by 0.08 stays per 1,000 beneficiaries per month, a statistically significant change (p<0.001).

Based on the consistent decrease in rates from baseline to full implementation and the statistically significant decrease in the monthly trend at full implementation compared to projected rates had the initial implementation trend continued, this measure supports the hypothesis that the Waiver will reduce IP hospitalization for SUD.

Table 5-22 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-34 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-35 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-22—ITS Results (Measure 26, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	3.66***	<0.001	3.69***	<0.001
Baseline monthly trend	-0.02**	0.038	-0.02**	0.043
Level change at initial implementation	0.37**	0.033	0.35**	0.042
Change in monthly trend – initial implementation	0.00	0.773	0.00	0.814
Level change at full implementation	0.05	0.862	0.02	0.940
Change in monthly trend – full implementation	-0.08***	<0.001	-0.08**	0.010

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-34—Illustration of ITS Analysis (Measure 26, Non-Expansion and Total Population)

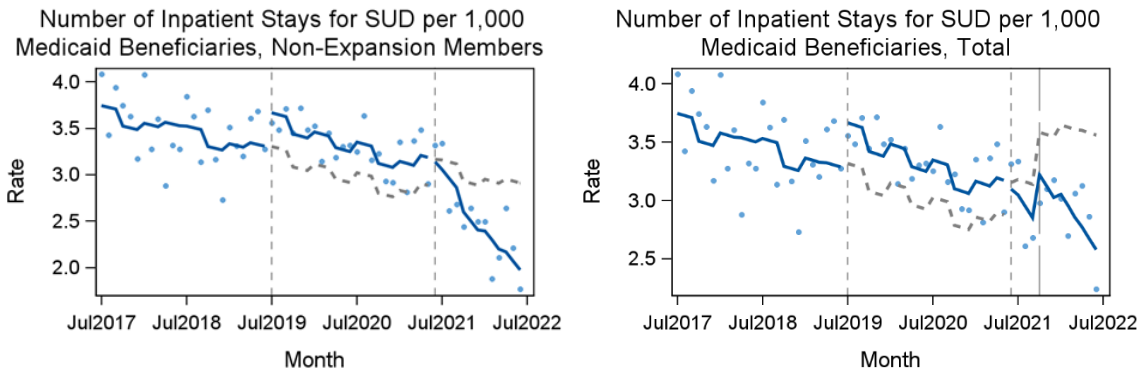
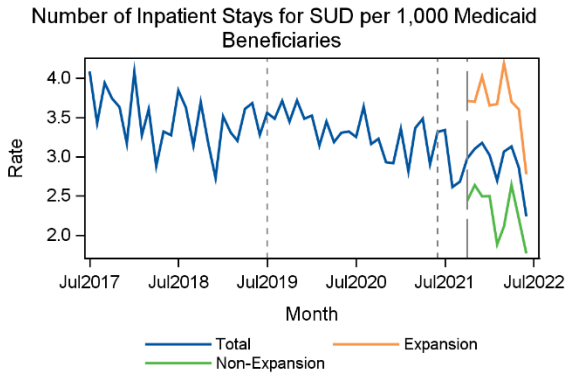


Figure 5-35—Measure 26 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 26 Conclusion: Supports the hypothesis

Average Number of Days of Inpatient Hospitalization for SUD (Measure 27)

Measure 27 seeks to determine whether the Waiver decreased the total number of days of IP hospitalization for SUD among beneficiaries ages 19–64. The number of days of IP hospitalization for an SUD among non-expansion beneficiaries decreased from a three-month average of 28.2 days per 1,000 beneficiaries from July through August 2017 to 13.3 days per 1,000 beneficiaries from April through June 2022. Prior to the initial implementation of the Waiver, the baseline number of days of IP hospitalization for an SUD was decreasing each month (p=0.217). After the initial implementation when Medicaid coverage was extended to IMD stays greater than 15 days, rates during the initial implementation period decreased 0.09 days each month per 1,000 beneficiaries compared to the projected rates had the baseline period continued, although this decrease was not statistically significant (p=0.462). Following the full implementation of the Waiver which added services for MMIW and MAT/OTP, the trend decreased further by 0.37 days each month per 1,000 beneficiaries compared to the projected trend had the initial implementation period continued, which was statistically significant (p=0.005). The number of days of IP hospitalization for an SUD for the total Medicaid population followed a similar trend, decreasing from a three-month average of 28.2 days per 1,000 beneficiaries from July through August 2017 to 16.0 days per 1,000 beneficiaries from April through June 2022.

As rates were decreasing throughout the entire measurement period and there was a statistically significant decrease in the trend during full implementation relative to the projected rates had the initial implementation trend continued, this measure supports the hypothesis that the Waiver reduced IP hospitalization for SUD.

Figure 5-36 illustrates the model-based average in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-23 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-37 displays the average rate in the expansion population (orange line) compared to the non-expansion (blue line) and total populations (green line) from July 2017 to June 2022.

Table 5-23—ITS Results (Measure 27, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	27.51***	<0.001	27.47***	<0.001
Baseline monthly trend	-0.14	0.217	-0.13	0.234
Level change at initial implementation	2.37	0.107	2.13	0.151
Change in monthly trend – initial implementation	-0.09	0.462	-0.08	0.509
Level change at full implementation	-1.06	0.540	-1.08	0.517
Change in monthly trend – full implementation	-0.37**	0.005	-0.14	0.570

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-36—Illustration of ITS Analysis (Measure 27, Non-Expansion and Total Population)

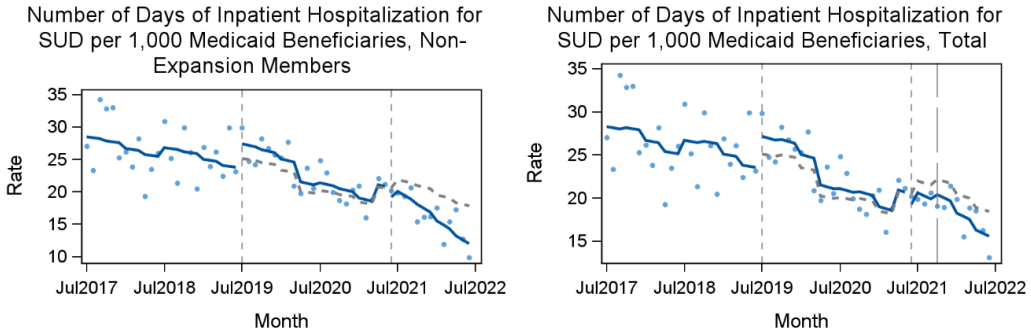
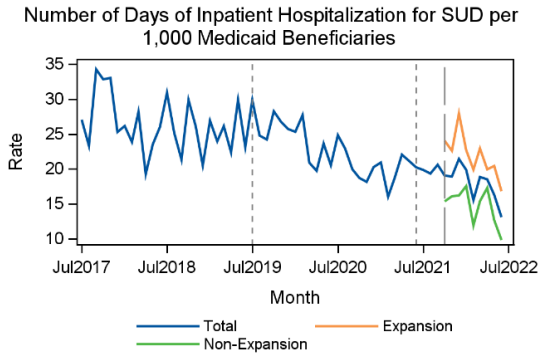


Figure 5-37—Measure 27 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 27 Conclusion: Supports the hypothesis

Average Length of Stay of Inpatient Hospitalization for SUD (Measure 28)

Measure 28 seeks to determine whether the Waiver reduced the ALOS of IP hospitalization for SUD. For non-expansion beneficiaries, the trend during initial implementation decreased by 0.02 days compared to the projected average had the baseline trend continued, although this change was not statistically significant (p=0.422). The trend following full implementation of the Waiver remained effectively unchanged compared to projected rates had the initial implementation trend continued, which was not statistically significant (p=0.898). A sharp decrease in the ALOS of IP hospitalizations for an SUD occurred in March and April 2020, likely due to the COVID-19 PHE's impact on reducing hospital utilization and access.[5-9]

The total Waiver population followed a similar trend as the non-expansion population during initial implementation. However, the trend worsened during full implementation, where the ALOS increased by 0.08 days compared to projected rates had the initial implementation trend continued, although this change was not statistically significant (p=0.112).

The ALOS during each implementation period did not demonstrate statistically significant changes compared to the projected averages, although the observed rates were trending in the desired downward direction among both the non-expansion and total populations. Continued assessment of this measure with additional data points will be included in the Summative Evaluation Report. Therefore, this measure does not support the hypothesis that the Waiver will reduce IP hospitalizations for SUD.

Table 5-24 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-38 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-39 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-24—ITS Results (Measure 28, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	6.77***	<0.001	6.69***	<0.001
Baseline monthly trend	0.01	0.543	0.01	0.480
Level change at initial implementation	-0.31	0.281	-0.33	0.270
Change in monthly trend – initial implementation	-0.02	0.422	-0.02	0.426
Level change at full implementation	-0.44	0.371	-0.40	0.455
Change in monthly trend – full implementation	0.00	0.898	0.08	0.112

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

5-9 Birkmeyer JD, Barnato A, Birkmeyer N, *et al*.., "The Impact of the COVID-19 Pandemic on Hospital Admissions in the United States," *Health Affairs*, Available at: https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.00980. Accessed on: Mar. 10, 2023.

Figure 5-38—Illustration of ITS Analysis (Measure 28, Non-Expansion and Total Population)

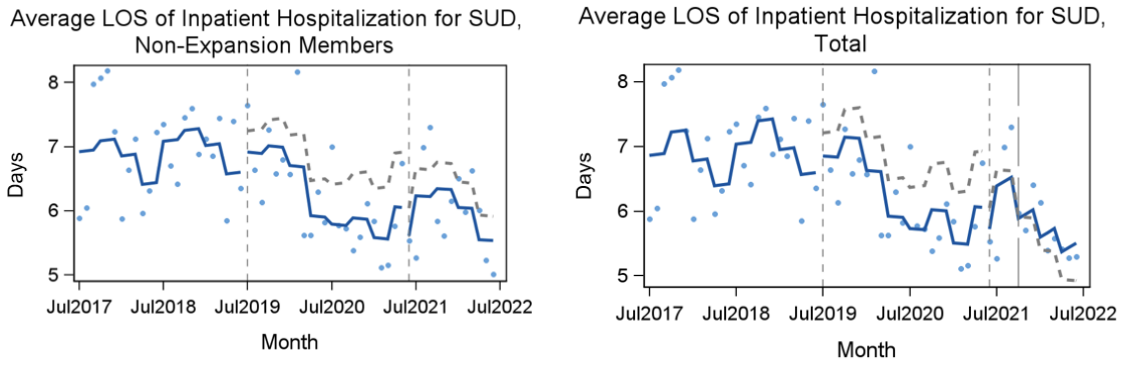
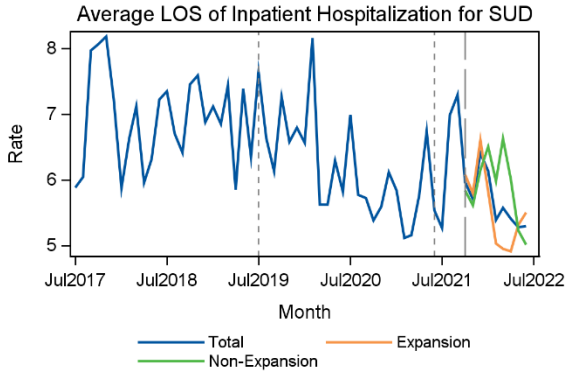


Figure 5-39—Measure 28 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 28 Conclusion: Does not support the hypothesis

Hypothesis 2: The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with an SUD.

Average Number of Inpatient Stays for Any Cause (Measure 29)

Measure 29 assesses whether the Waiver has reduced the IP hospitalizations for beneficiaries with an SUD by examining the number of IP stays for any cause among beneficiaries with an SUD. Rates for this measure followed an overall downward trend from baseline through full implementation of the Waiver. For the non-expansion population, baseline rates were decreasing by 0.44 stays per 1,000 beneficiaries per month and continued to decrease in the initial implementation by 0.41 stays per 1,000 beneficiaries per month compared to projected rates had the baseline trend continued, a statistically significant finding (p=0.002). Despite this change in the trend, rates increased by an average of 8.45 stays per 1,000 beneficiaries upon initial implementation (p=0.002). Although not statistically significant, rates continued to decrease in the full implementation period by 0.08 stays per 1,000 beneficiaries per month compared to projected rates had the initial implementation trend continued (p=0.757).

Considering the decrease in rates throughout the evaluation periods from baseline, and the statistically significant decrease in the initial implementation rates compared to projected rates had the baseline trend continued, this measure supports the hypothesis that the Waiver will reduce IP hospitalizations for beneficiaries with an SUD.

Table 5-25 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-40 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-41 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-25—ITS Results (Measure 29, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	77.34***	<0.001	77.39***	<0.001
Baseline monthly trend	-0.44**	0.002	-0.45**	0.002
Level change at initial implementation	8.45**	0.002	8.56**	0.002
Change in monthly trend – initial implementation	-0.41**	0.002	-0.41**	0.003
Level change at full implementation	-2.28	0.462	-2.40	0.461
Change in monthly trend – full implementation	-0.08	0.757	-0.59	0.158

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-40—Illustration of ITS Analysis (Measure 29, Non-Expansion and Total Population)

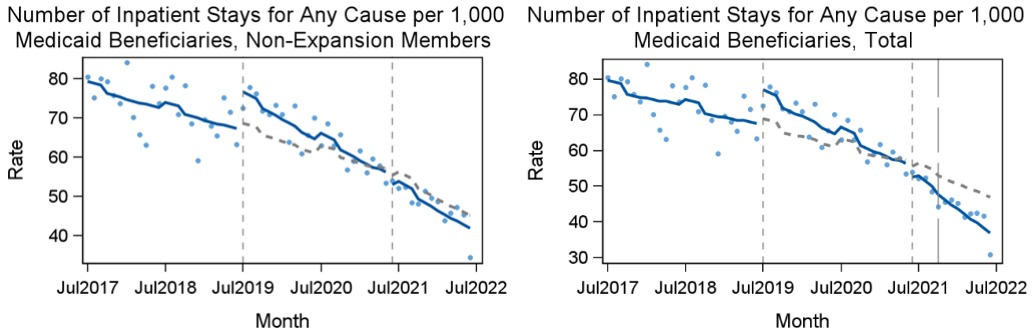
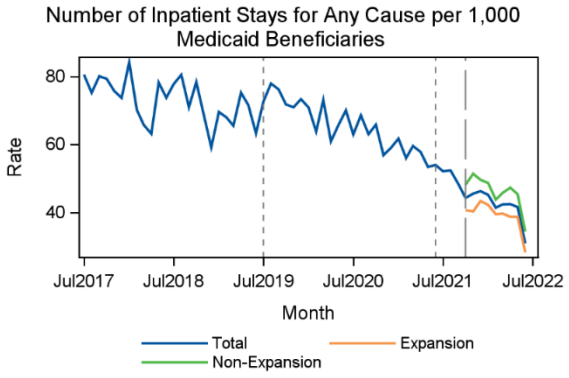


Figure 5-41—Measure 29 Trend Over Time; Non-Expansion, Total and Expansion Populations



Measure 29 Conclusion: Supports the hypothesis

Average Number of Days of Inpatient for Any Cause (Measure 30)

Measure 30 assesses whether the Waiver has reduced IP hospitalization by calculating the number of IP days for any cause among beneficiaries with an SUD. The total number of days for IP stays of any cause for beneficiaries with an SUD among non-expansion beneficiaries was reduced by half from the start of the baseline period to the end of the evaluation period. From July 2017 through September 2017 the number of IP days averaged 592.6 days per 1,000 beneficiaries and fell to 296.9 days per 1,000 beneficiaries from April 2022 through June 2022.

Among non-expansion beneficiaries, the number of IP days decreased by 3.31 per 1,000 beneficiaries each month during the baseline. The number of days decreased further during the initial implementation period, declining by an average of 2.92 days per 1,000 beneficiaries each month compared to the projected rates had the baseline trend continued, a statistically significant difference (p=0.043). The change in monthly trend at full implementation with the addition of MAT/OTP programs also continued to decrease significantly, declining by an average of 7.92 days each month per 1,000 beneficiaries compared to the projected rates had the initial implementation trend continued (p=0.022).

Following the initial and full implementations of the Waiver there was a statistically significant decrease in the average number of days for IP stays of any cause. Based on these results, this measure supports the hypothesis that the Waiver will reduce IP hospitalization for beneficiaries with an SUD.

Table 5-26 illustrates the model-based average in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-26 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-43 displays the average rate in the expansion population (orange line) compared to the non-expansion (blue line) and total populations (green line) from July 2017 to June 2022.

Table 5-26—ITS Results (Measure 30, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	624.25***	<0.001	623.43***	<0.001
Baseline monthly trend	-3.31**	0.006	-3.32**	0.005
Level change at initial implementation	24.76	0.207	25.06	0.198
Change in monthly trend – initial implementation	-2.92**	0.043	-2.93**	0.042
Level change at full implementation	31.68	0.312	23.31	0.411
Change in monthly trend – full implementation	-7.92**	0.022	-4.43	0.343

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-42—Illustration of ITS Analysis (Measure 30, Non-Expansion and Total Population)

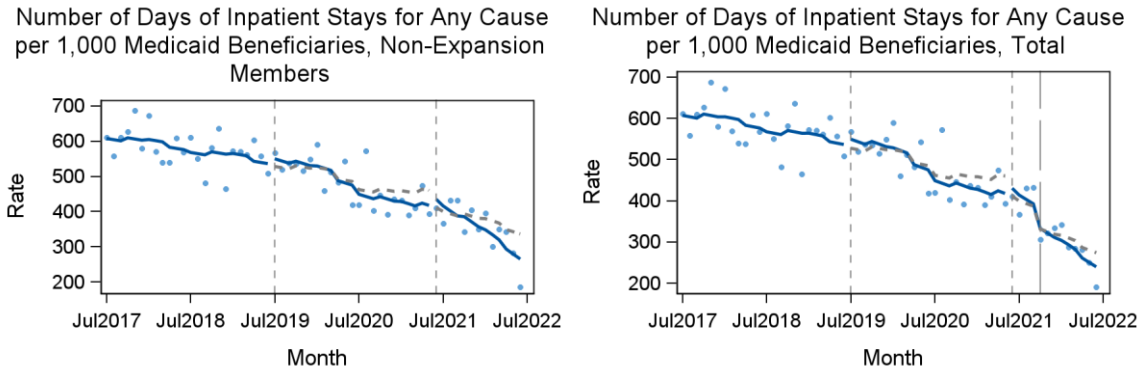
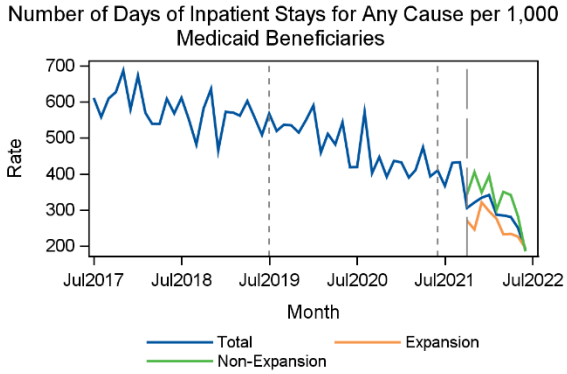


Figure 5-43—Measure 30 Trend Over Time; Non-Expansion, Total, and Expansion Populations



Measure 30 Conclusion: Supports the hypothesis

Average Length of Stay of Inpatient Hospitalization for Any Cause (Measure 31)

Measure 31 assesses whether the Waiver has reduced the ALOS of IP stays for beneficiaries with an SUD. The baseline trend increased slightly before decreasing by 0.03 days per month in the initial implementation period when the exclusion of IMD stays greater than 15 days was lifted, compared to projected averages had the baseline trend continued, which was statistically significant at the 10 percent level (p=0.081). This trend continued after the full implementation, in which the average length of IP stay decreased by 0.08 days per month compared to projected rates had the initial implementation period continued. This change in the trend was statistically significant at the 10 percent level (p=0.055). The sustained decrease in the early implementation period may have been related to the COVID-19 PHE, particularly in the latter half of 2020 and early 2021. Increases in the ALOS in the late implementation period may represent pent-up demand resulting from lingering systemic impacts of the COVID-19 PHE for the non-expansion population and pent-up demand in the expansion population resulting from a lack of healthcare coverage prior to the expansion of Medicaid.

Based on the statistically significant decrease in the initial implementation rates compared to projected rates had the baseline trend continued, and in the full implementation rates compared to projected rates had the initial implementation rates continued, the measure supports the hypothesis that the Waiver will reduce the ALOS of IP hospitalization for beneficiaries with an SUD.

Table 5-27 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-44 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-45 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-27—ITS Results (Measure 31, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	5.71***	<0.001	5.70***	<0.001
Baseline monthly trend	0.03**	0.037	0.03**	0.018
Level change at initial implementation	-0.51*	0.058	-0.54**	0.043
Change in monthly trend – initial implementation	-0.03*	0.081	-0.03*	0.088
Level change at full implementation	0.75*	0.097	0.73	0.142
Change in monthly trend – full implementation	-0.08*	0.055	0.01	0.873

*p< 0.1, **p < 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-44—Illustration of ITS Analysis (Measure 31, Non-Expansion and Total population)

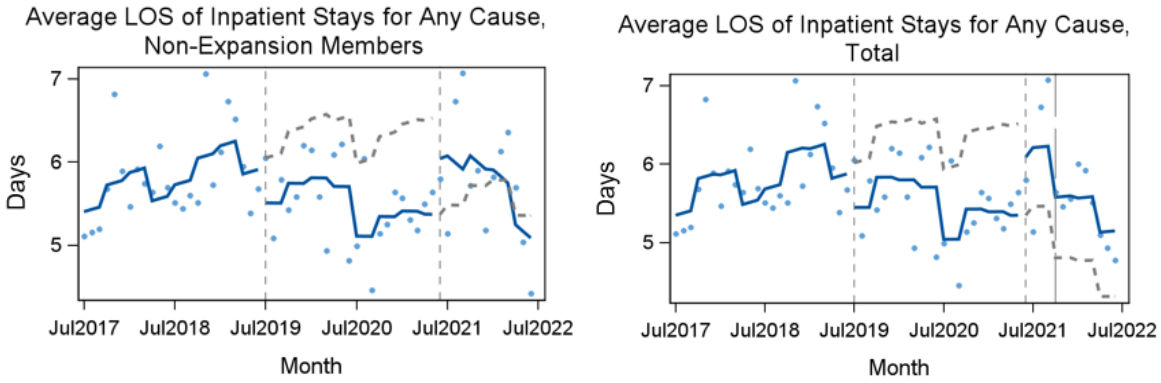
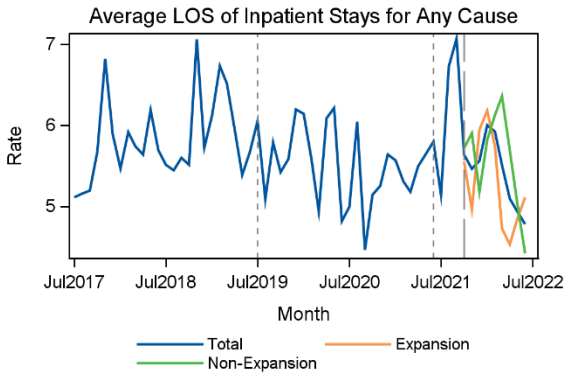


Figure 5-45—Measure 31 Trend Over Time; Non-Expansion, Total and Expansion populations



Measure 31 Conclusion: Supports the hypothesis

Average Number of ED Visits for Any Cause (Measure 32)

Measure 32 assesses ED utilization for any cause among beneficiaries with an SUD to determine whether the Waiver has reduced ED utilization of any cause for beneficiaries with an SUD. Baseline rates increased by 0.19 visits per 1,000 beneficiaries each month. After initial implementation, however, the rate decreased by 1.75 visits per 1,000 beneficiaries each month compared to the projected rates if the baseline trend continued, which was statistically significant ($p<0.001$).

Following the full implementation, which added services for MMIW and MAT/OTP, the monthly trend increased by 2.20 visits per 1,000 beneficiaries per month compared to the projected trend had the initial implementation trend continued, which was also statistically significant ($p<0.001$). The level change at full implementation decreased by 9.72 visits per 1,000 beneficiaries per month compared to the initial implementation period, which was statistically significant at the 10 percent level ($p=0.091$).

The total number of ED visits for any cause for the expansion group had consistently lower ED visits for any cause than the non-expansion group. Upon the inclusion of the expansion group, there was a larger decline in the rate following expansion among the total target population.

Due to the mixed results of the ITS analysis (i.e., a relative decrease in the trend upon initial implementation and a relative increase in the trend upon full implementation) this measure neither supports nor fails to support the hypothesis that the Waiver reduced ED utilization for SUD.

Table 5-28 illustrates the model-based average in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Table 5-28 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-47 displays the average rate in the expansion population (orange line) compared to the non-expansion (blue line) and total populations (green line) from July 2017 to June 2022.

Table 5-28—ITS Results (Measure 32, Non-Expansion and Total Population)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	234.01***	<0.001	234.17***	<0.001
Baseline monthly trend	0.19	0.478	0.20	0.460
Level change at initial implementation	20.89**	0.003	20.73**	0.004
Change in monthly trend – initial implementation	-1.75***	<0.001	-1.75***	<0.001
Level change at full implementation	-9.72*	0.091	-9.96*	0.087
Change in monthly trend – full implementation	2.20***	<0.001	1.55*	0.062

*$p<0.1$, **$p<0.05$, ***$p<0.001$
Note: Full model results are presented in Appendix A.

Figure 5-46—Illustration of ITS Analysis (Measure 32, Non-Expansion and Total Population)

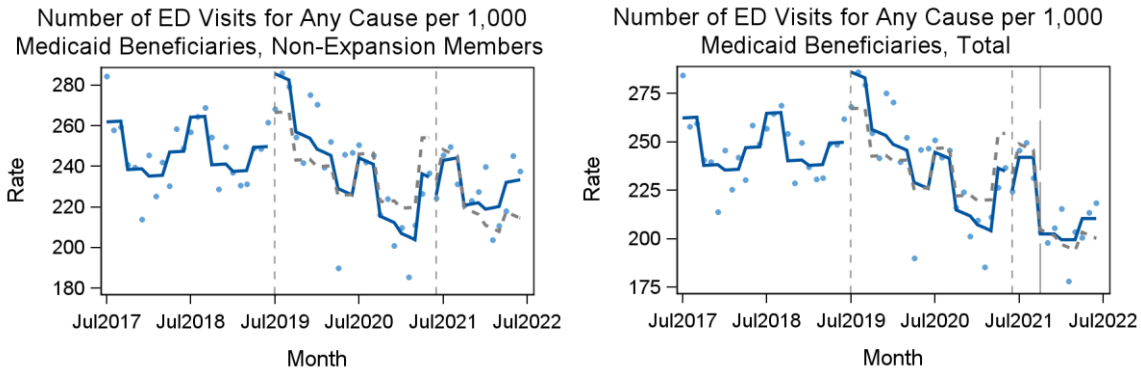
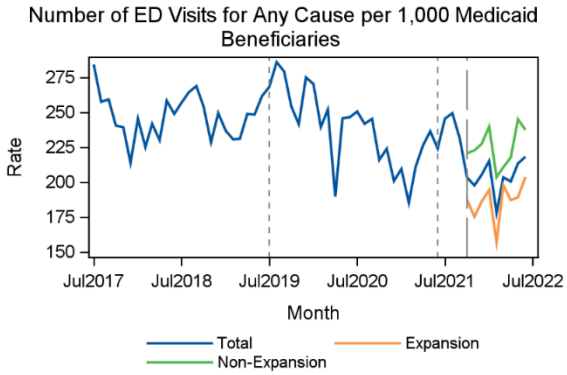


Figure 5-47—Measure 32 Trend Over Time; Non-Expansion, Total and Expansion Populations



Measure 32 Conclusion: Neither supports nor fails to support the hypothesis

To evaluate costs associated with the Waiver, HSAG followed guidance specified in CMS Appendix C: Approaches to Analyzing Costs Associated with Section 1115 Demonstrations for Beneficiaries with Serious Mental Illness/Serious Emotional Disturbance or Substance Use Disorders.[5-10] HSAG identified members with an SUD and calculated cost of care for these beneficiaries.

An ITS analysis was performed on per-member per-month (PMPM) costs. Indicator variables for each quarter were included in the model to control for seasonality. Two indicator variables to account for the effects of the COVID-19 PHE were also included: one to capture the initial lock-down period of quarter (Q) 2 2020, and another to capture gradual re-opening during Q3 2020 through Q1 2021. A generalized linear model (GLM) with log link was used because costs are positive and typically not normally distributed. Although this type of model allows for more accurate prediction of costs, interpretation is not as straightforward as a simple linear regression

5-10 Centers for Medicare & Medicaid Services. Appendix C: Approaches to Analyzing Costs Associated with Section 1115 Demonstrations for Beneficiaries with Serious Mental Illness/Serious Emotional Disturbance or Substance Use Disorders. Available at: https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-sed-sud-cost-appendix-c.pdf. Accessed on: Mar. 13, 2023.

model, which can be interpreted in dollar amount changes. Results in this section are presented as percentage changes in costs.

To identify cost drivers associated with diagnosis and treatment of SUD, ITS models were constructed for the following populations:

- SUD-IMD
- SUD-Other
- Non-SUD

To identify treatment cost drivers for beneficiaries with an SUD, costs were split out by type of care. ED-related OP costs were further separated from other non-ED OP costs, given that ED services are particularly costly and represent an important opportunity for cost savings that could be achieved with better access to SUD treatment services.

- Total costs
- Inpatient (IP)
- OP
  - ED OP
  - Non-ED OP
- Long-term care (LTC)
- Professional
- Pharmacy

Hypothesis 3: The demonstration will reduce or maintain total cost of SUD-related care.

PMPM Cost for SUD Treatment (Measure 33)

Measure 33 assesses cost drivers among the SUD population.

A GLM with a log link was constructed to account for costs being positive and not normally distributed. This model allows for a more accurate analysis of costs; however, interpretation is not as straightforward as a simple linear regression model, which can be interpreted in dollar amount changes. Results are presented as percentage changes in costs given a unit change in the variable.

Cost information for IMD stays were taken from the claims and encounter data extract since the MCO reports lacked data on costs related to IMD stays. Due to the use of various data sources, the IMD stays represented in this cost analyses may not be consistent with the stays reported for other IMD measures. HSAG and the Nebraska Department of Health and Human Services (DHHS) will work together to align on the methodology for IMD stays identification for the Summative Evaluation Report.

SUD PMPM Costs Beneficiaries with an SUD

PMPM costs associated with an SUD diagnosis or MAT treatment in an IMD for the non-expansion population increased by 0.94 percent per month during the baseline period (p=0.035). After initial implementation of the Waiver, costs increased by 0.47 percent per month (p=0.471) compared to the projected costs had the baseline trend continued. Following full implementation of the Waiver, the monthly trend changed by 0.42 percent per

month relative to projected costs had the initial implementation period trend continued. Although these results are not statistically significant, an increasing trend is expected as the Waiver allowed Medicaid to extend coverage to IMD stays regardless of the duration. SUD-IMD costs for the expansion population were overall higher than the non-expansion population after October 2021. As additional data points become available in the Summative Evaluation Report, a more comprehensive assessment of the Waiver's impact on SUD-IMD costs will be conducted.

Table 5-29 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-48 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-49 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to June 2022.

Table 5-29—Primary ITS Results (Measure 33: SUD-IMD PMPM Cost Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Change in Costs	*p*-value	Change in Costs	*p*-value
Intercept	$21.30***	<0.001	$20.99***	<0.001
Baseline monthly trend	0.94%**	0.035	0.83%*	0.089
Level change at initial implementation	-15.99%*	0.062	-13.06%	0.173
Change in monthly trend – initial implementation	0.47%	0.471	0.31%	0.656
Level change at full implementation	-22.75%*	0.057	-15.66%	0.225
Change in monthly trend – full implementation	0.42%	0.691	-2.87%**	0.036

*$p < 0.1$, **$p < 0.05$, ***$p < 0.001$
Note: Full model results are presented in Appendix A.

Figure 5-48—Illustration of ITS Analysis (Measure 33: SUD-IMD PMPM Cost Among Beneficiaries with an SUD)

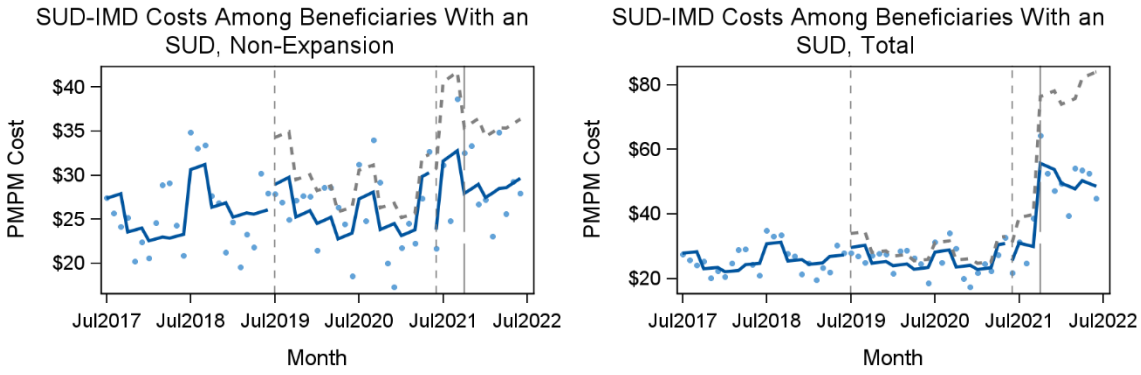
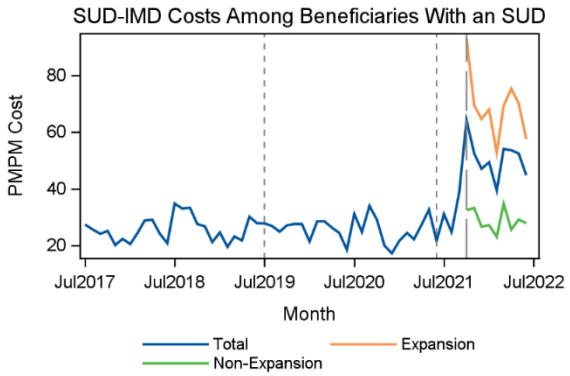


Figure 5-49—Measure 33: SUD-IMD PMPM Cost Among Beneficiaries with an SUD Trend Over Time - Non-Expansion, Total, and Expansion Populations



Other SUD PMPM Costs Among SUD Beneficiaries

PMPM costs associated with an SUD diagnosis or MAT outside of the IMD setting for the non-expansion population were decreasing by 0.72 percent per month during the baseline period (p=0.031). After initial implementation, costs increased by an average of 18.28 percent (p=0.021) followed by an increase in the trend of 0.26 percent per month compared to the projected costs had the baseline trend continued, although this increase was not statistically significant (p<0.626). However, following full implementation of the Waiver, costs began to decrease by 1.04 percent per month relative to the initial implementation trend, although this decline was not statistically significant (p=0.339). Other SUD costs for the expansion population were overall higher than the non-expansion population after October 2021. As additional data points become available, further assessment of the Waiver's impact on SUD-IMD costs will be conducted.

Table 5-30 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-49 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-51 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to June 2022

Table 5-30—Primary ITS Results (Measure 33: Other SUD PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Change in Costs	*p*-value	Change in Costs	*p*-value
Intercept	$475.66***	<0.001	$476.94***	<0.001
Baseline monthly trend	-0.72%**	0.031	-0.71%**	0.027
Level change at initial implementation	18.28%**	0.021	17.74%**	0.019
Change in monthly trend – initial implementation	0.26%	0.626	0.28%	0.586
Level change at full implementation	-12.26%	0.275	-12.93%	0.223
Change in monthly trend – full implementation	-1.04%	0.339	-1.18%	0.446

*p< 0.1, **p< 0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-50—Illustration of ITS Analysis (Measure 33: Other SUD PMPM Costs Among Beneficiaries with an SUD)

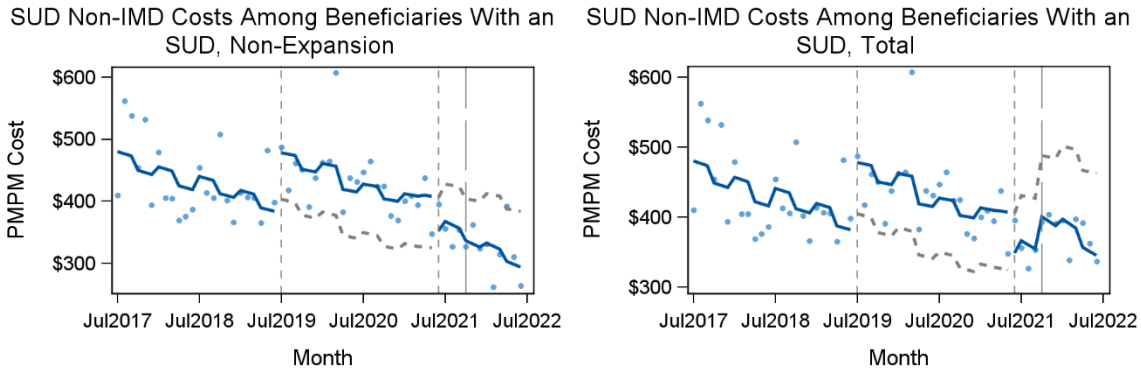
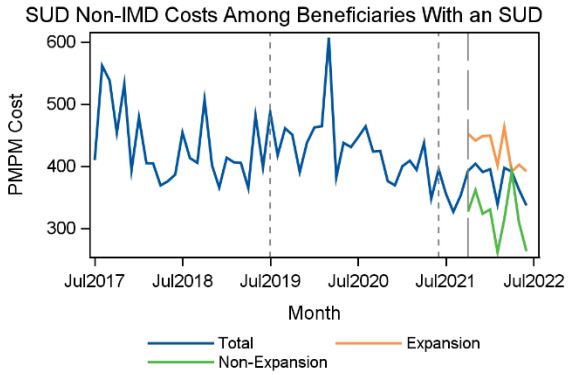


Figure 5-51—Measure 33: Other SUD PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total, and Expansion Populations



Non-SUD PMPM Costs Among Beneficiaries with an SUD

Among the non-expansion population, non-SUD PMPM costs were slightly increasing during the baseline period (p=0.484). However, after initial implementation of the Waiver, the monthly cost trend decreased significantly compared to the projected costs had the baseline trend continued, by 1.74 percent per month (p<0.001). Following full implementation of the Waiver, the trend increased slightly by 0.06 percent per month relative to the projected rates had the initial implementation period continued, although this was not statistically significant. Unlike SUD costs, non-SUD costs among the expansion population were overall lower than non-SUD costs among the non-expansion population after October 2021. As additional data points become available, further assessment of the Waiver's impact on non-SUD costs will be conducted.

Table 5-31 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-52 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-53 displays the average rate in the expansion population (orange line) compared to the non-expansion (green line) and total populations (blue line) from July 2017 to June 2022.

Table 5-31—Primary ITS Results (Measure 33: Non-SUD PMPM Cost Among Beneficiaries with an SUD)

Variable	Non-Expansion		Total	
	Change in Costs	*p*-value	Change in Costs	*p*-value
Intercept	$1,468.03***	<0.001	$1,466.18***	<0.001
Baseline monthly trend	0.17%	0.484	0.18%	0.471
Level change at initial implementation	14.35%**	0.012	14.13%**	0.015
Change in monthly trend – initial implementation	-1.74%***	<0.001	-1.73%***	<0.001
Level change at full implementation	14.04%	0.124	14.45%	0.121
Change in monthly trend – full implementation	0.06%	0.935	-0.07%	0.962

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-52—Illustration of ITS Analysis (Measure 33: Non-SUD PMPM Cost Among Beneficiaries with an SUD)

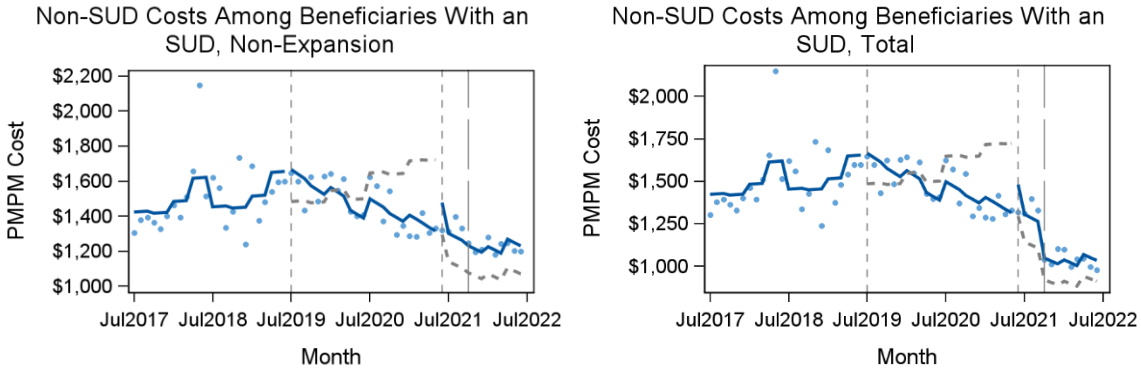
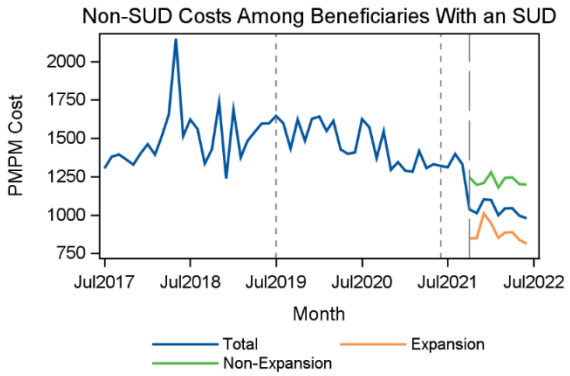


Figure 5-53—Measure 33: Non-SUD PMPM Cost Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total, and Expansion Populations



SUD IMD costs demonstrated statistically significant one-time decreases upon initial and full implementation; they also showed an overall increasing monthly cost trend in both implementation periods relative to their respective projected averages, although these increases were not statistically significant. Other SUD costs showed evidence of an increasing monthly trend during the initial implementation period followed by a decreasing monthly trend during the full implementation period, although neither result was statistically significant. Non-SUD costs demonstrated a statistically significant decrease in the initial implementation monthly trend relative to baseline projected averages, and a small relative increase in the monthly trend during the full implementation

period that was not statistically significant. Considering the results altogether, this measure supports the hypothesis that the Waiver will reduce or maintain total cost of SUD-related care.

Measure 33 Conclusion: Supports the hypothesis

Hypothesis 4: The demonstration will reduce or maintain total cost of care.

PMPM Cost (Measure 34)

Measure 34 assesses cost drivers for beneficiaries with an SUD.

A GLM with a log link was constructed to account for costs being positive and not normally distributed. This model allows for a more accurate analysis of costs; however, interpretation is not as straightforward as a simple linear regression model, which can be interpreted in dollar amount changes. Results are presented as percentage changes in costs given a unit change in the variable.

Total PMPM Costs Among Beneficiaries with an SUD

Total PMPM costs among SUD non-expansion beneficiaries were variable but followed a flat trend during the baseline period (p=0.995). After initial implementation, costs decreased by 1.30 percent per month (p<0.001) compared to the projected costs had the baseline trend continued. Following full implementation of the Waiver, costs decreased by 0.18 percent per month compared to projected costs had the initial implementation trend continued (p=0.770). The impact of the COVID-19 PHE is evidenced by a slight dip in total costs in early 2020, possibly due to disruptions in the healthcare system that were prevalent during this time period. Total costs were overall higher in the non-expansion population compared to the expansion population after October 2021.

Table 5-32 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-54 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-55 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-32—Primary ITS Results (Measure 34: Total PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$1,957.76***	<0.001	$1,957.74***	<0.001
Baseline monthly trend	0.00%	0.995	0.01%	0.950
Level change at initial implementation	14.53%**	0.002	14.14%**	0.003
Change in monthly trend – initial implementation	-1.30%***	<0.001	-1.29%***	<0.001
Level change at full implementation	7.48%	0.310	8.07%	0.279
Change in monthly trend – full implementation	-0.18%	0.770	-0.52%	0.636

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-54—Illustration of ITS Analysis (Measure 34: Total PMPM Costs Among Beneficiaries with an SUD)

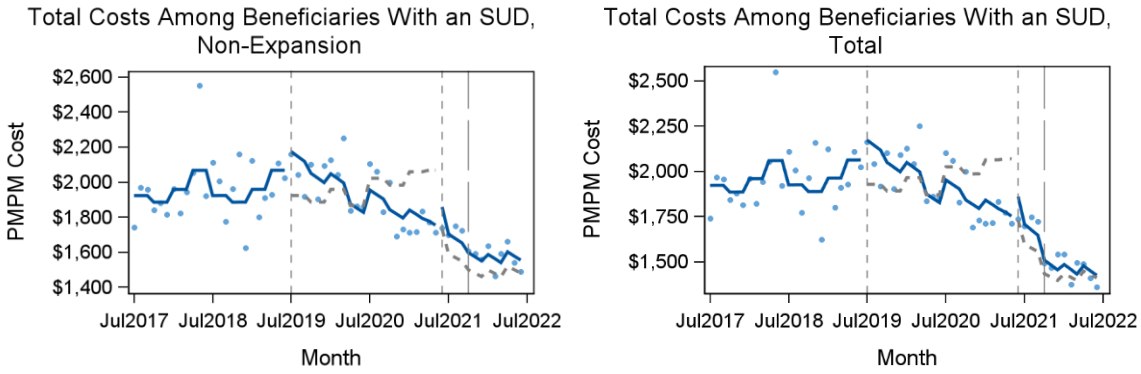
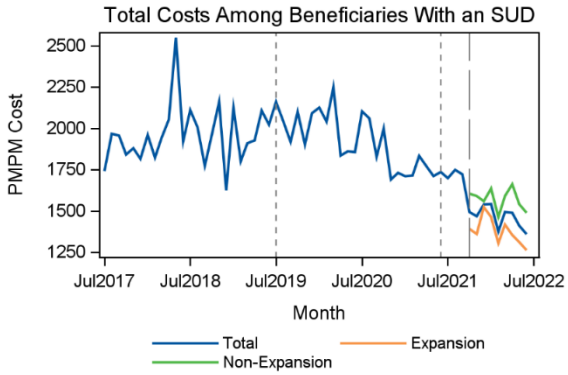


Figure 5-55—Measure 34: Total PMPM Costs Among Beneficiaries with an SUD Trend Over Time – Non-Expansion, Total and Expansion Populations



IP PMPM Costs Among Beneficiaries with an SUD

During the baseline period, IP costs for SUD non-expansion beneficiaries were declining by 2.06 percent per month and continued to decline during initial implementation of the Waiver by 0.92 percent per month compared to the projected rates had the baseline continued, though this decline was not statistically significant (p=0.338). Following full implementation with the addition of MAT/OTP services, IP costs further declined by 1.34 percent per month compared to the projected costs had the initial implementation trend continued; however, this change was not statistically significant (p=0.486). ITS analysis also shows large increases in average costs at initial implementation of 49.99 percent and at full implementation of 35.07 percent, though only the increase in average cost during the initial implementation was statistically significant (p=0.002).

Table 5-33 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-56 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-57 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-33—Primary ITS Results (Measure 34: IP PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$726.90***	<0.001	$725.76***	<0.001
Baseline monthly trend	-2.06%***	<0.001	-2.04%***	<0.001
Level change at initial implementation	49.99%**	0.002	49.07%**	0.002
Change in monthly trend – initial implementation	-0.92%	0.338	-0.90%	0.348
Level change at full implementation	35.07%	0.147	37.38%	0.127
Change in monthly trend – full implementation	-1.34%	0.486	-3.82%	0.247

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-56—Illustration of ITS Analysis (Measure 34: IP PMPM Costs Among Beneficiaries with an SUD)

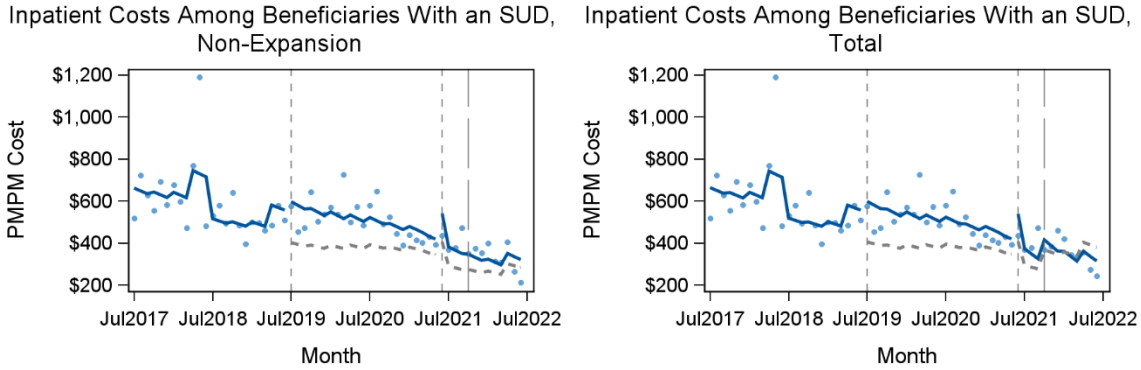
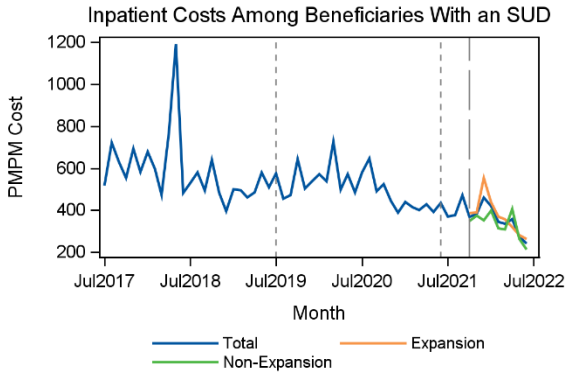


Figure 5-57—Measure 34: Total PMPM IP Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total, and Expansion Populations



Total OP, ED OP, and Non-ED OP PMPM Costs Among Beneficiaries with an SUD

Prior to the initial implementation, overall OP costs increased by 0.49 percent per month during the baseline period among non-expansion beneficiaries with an SUD (p=0.055). ED costs increased by 0.55 percent per month during the baseline period (p=0.017) and non-ED costs increased by 0.46 percent per month (p=0.266).

Upon initial implementation, there was a statistically significant increase in the average total OP costs of 16.94 percent (p=0.002); this shift was also statistically significant when stratifying OP costs by ED and non-ED OP

costs, with ED costs increasing by 10.94 percent (p=0.027) and non-ED costs increasing by 22.10 percent (p=0.015).

After initial implementation of the Waiver, there was a statistically significant decrease in the trend of total OP costs of 1.23 percent per month (p=0.001) compared to projected rates had the baseline trend continued. The trend in ED costs decreased by an average of 1.39 percent per month (p<0.001), and non-ED costs decreased by 1.18 percent per month (p=0.053) compared to projected rates had the baseline trend continued.

After full implementation with the addition of MAT/OTP services, there was a slight decrease in the trend of overall OP costs by 0.57 percent per month compared to the projected initial implementation trend, though this change was not statistically significant (p=0.389). This observed decrease is a combination of a decline in non-ED OP costs by 1.51 percent per month compared to projected costs had the initial implementation trend occurred (p=0.154) and an increase in ED-OP costs of 0.88 percent per month compared to projected costs had the initial implementation trend occurred (p=0.163).

Table 5-34 through Table 5-36 show the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-58, Figure 5-60 and Figure 5-62 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-59, Figure 5-61 and Figure 5-63 display the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-34—Primary ITS Results (Measure 34: Total OP PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$257.84***	<0.001	$258.48***	<0.001
Baseline monthly trend	0.49%*	0.055	0.47%*	0.061
Level change at initial implementation	16.94%**	0.002	17.38%**	0.002
Change in monthly trend – initial implementation	-1.23%**	0.001	-1.25%***	<0.001
Level change at full implementation	1.01%	0.898	-1.64%	0.833
Change in monthly trend – full implementation	-0.57%	0.389	0.57%	0.614

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-58— Illustration of ITS Analysis (Measure 34: Total OP PMPM Costs Among Beneficiaries with an SUD)

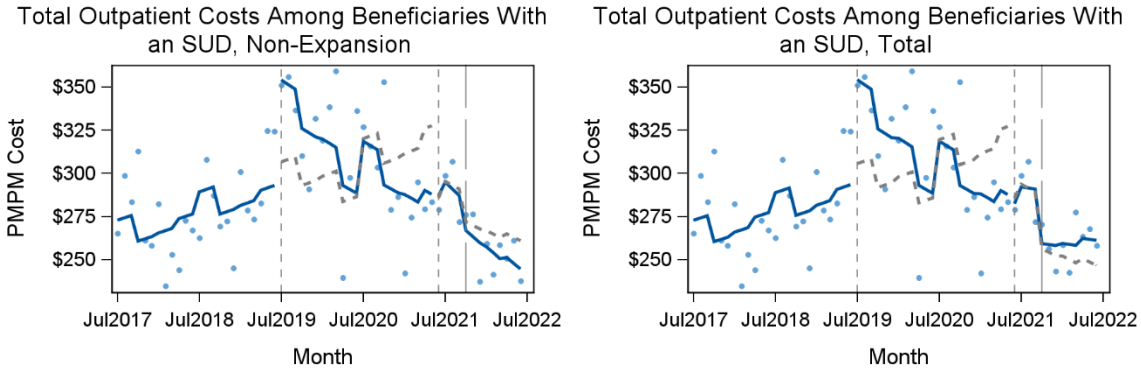


Figure 5-59—Measure 34: Total OP PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations

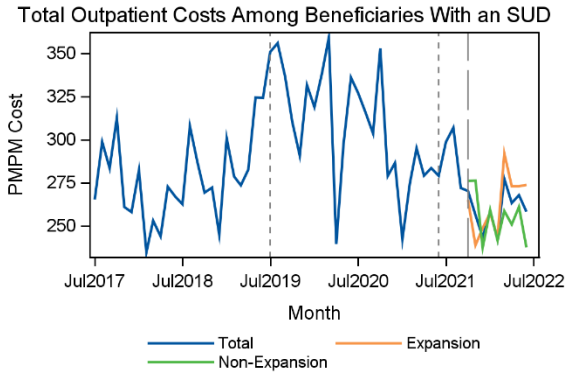


Table 5-35—Primary ITS Results (Measure 34: ED OP PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	**Estimate**	***p*-value**	**Estimate**	***p*-value**
Intercept	$103.39***	<0.001	$104.03***	<0.001
Baseline monthly trend	0.55%**	0.017	0.54%**	0.017
Level change at initial implementation	10.94%**	0.027	11.07%**	0.024
Change in monthly trend – initial implementation	-1.39%***	<0.001	-1.40%***	<0.001
Level change at full implementation	-4.97%	0.503	-5.37%	0.464
Change in monthly trend – full implementation	0.88%	0.163	0.90%	0.384

*$p < 0.1$, **$p<0.05$, ***$p<0.001$
Note: Full model results are presented in Appendix A.

Figure 5-60—Illustration of ITS Analysis (Measure 34: ED OP PMPM Costs Among Beneficiaries with an SUD)

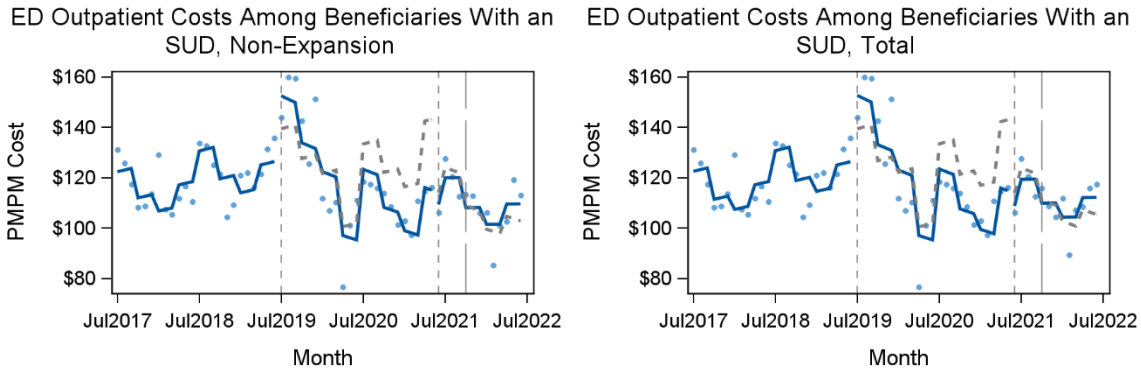


Figure 5-61—Measure 34: ED OP PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations

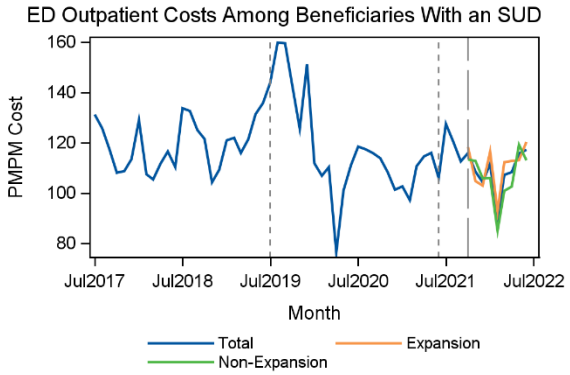


Table 5-36—Primary ITS Results (Measure 34: Non-ED OP PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	**Estimate**	***p*-value**	**Estimate**	***p*-value**
Intercept	$153.33***	<0.001	$153.44***	<0.001
Baseline monthly trend	0.46%	0.266	0.44%	0.284
Level change at initial implementation	22.10%**	0.015	22.79%**	0.012
Change in monthly trend – initial implementation	-1.18%*	0.053	-1.20%**	0.048
Level change at full implementation	5.49%	0.663	1.29%	0.917
Change in monthly trend – full implementation	-1.51%	0.154	0.39%	0.828

*$p < 0.1$, **$p<0.05$, ***$p<0.001$
Note: Full model results are presented in Appendix A.

Figure 5-62—Illustration of ITS Analysis (Measure 34: Non-ED OP PMPM Costs Among Beneficiaries with an SUD)

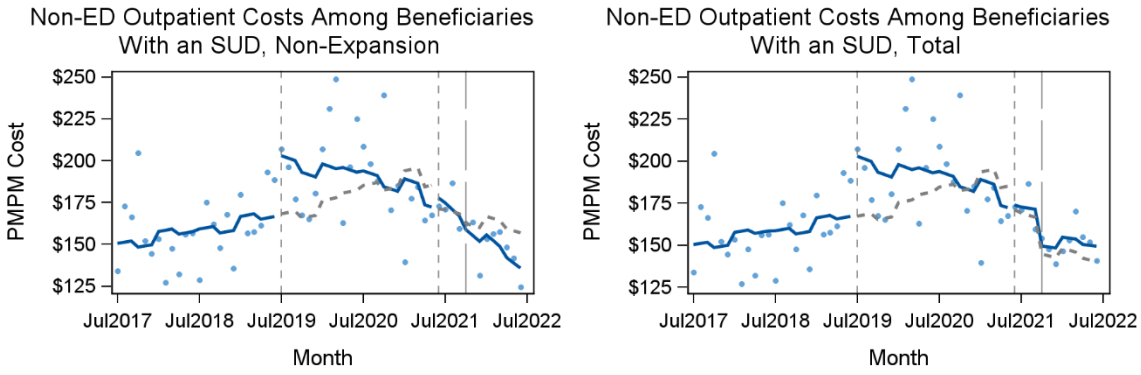
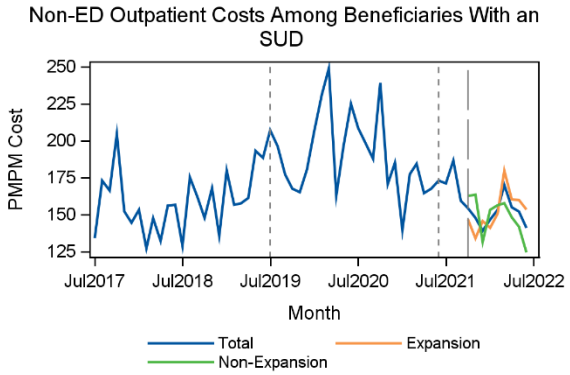


Figure 5-63—Measure 34: Non-ED OP PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations



LTC PMPM Costs Among Beneficiaries with an SUD

LTC costs for non-expansion SUD beneficiaries increased slightly by an average of 1.32 percent during the baseline period, though this was not statistically significant (p=0.345). The trend in LTC costs reversed direction after the baseline period, decreasing by 4.77 percent per month in the initial implementation period compared to projected costs had the baseline trend continued, however, this change was not statistically significant (p=0.266). Similarly, the trend decreased by 10.50 percent per month in the full implementation period compared to projected costs had the initial implementation trend continued, however, this change was not statistically significant (p=0.616).

Table 5-37 shows the primary results from ITS analysis. Full regression results are available in Appendix A. Figure 5-64 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-65 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-37—Primary ITS Results (Measure 34: LTC PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$158.73***	<0.001	$158.91***	<0.001
Baseline monthly trend	1.32%	0.345	1.32%	0.347
Level change at initial implementation	-20.38%	0.546	-20.26%	0.550
Change in monthly trend – initial implementation	-4.77%	0.266	-4.78%	0.266
Level change at full implementation	-1.97%	0.988	-8.08%	0.954
Change in monthly trend – full implementation	-10.50%	0.616	-6.95%	0.869

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-64—Illustration of ITS Analysis (Measure 34: LTC PMPM Costs Among Beneficiaries with an SUD)

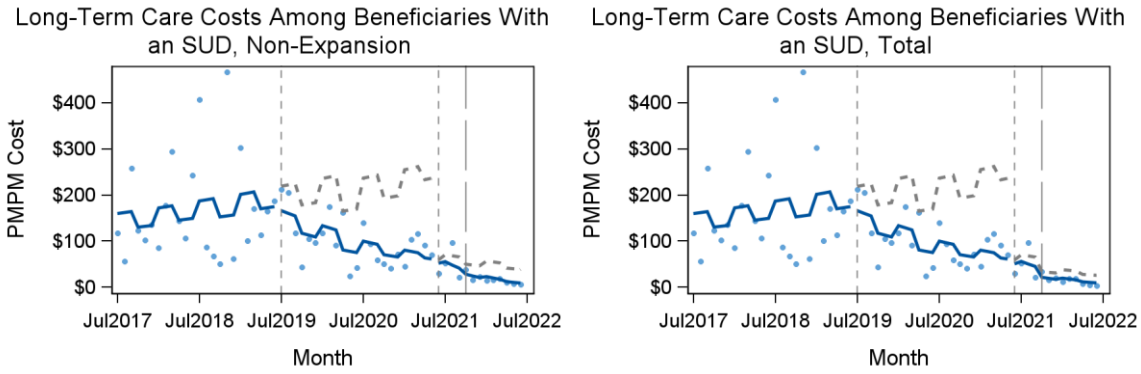
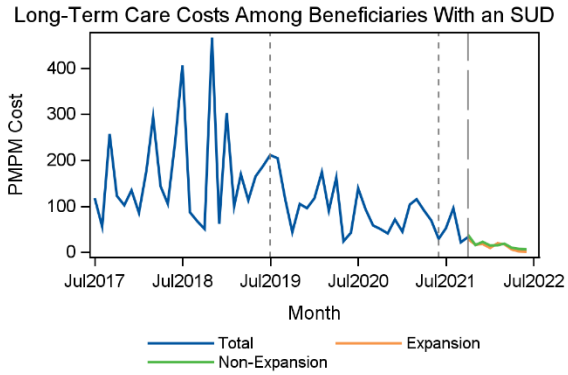


Figure 5-65—Measure 34: LTC PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations



Professional PMPM Costs Among Beneficiaries with an SUD

During the baseline period, professional costs among non-expansion SUD beneficiaries increased by an average of 0.46 percent per month ($p<0.001$). Following initial implementation, however, this trend reversed, with a decrease in costs of 0.92 percent per month compared to the projected costs had the baseline trend continued, a statistically significant difference ($p<0.001$). After full implementation, the trend in professional costs increased by 0.47 percent per month compared to projected costs had the initial implementation trend continued, though this was not statistically significant ($p=0.182$).

Table 5-38 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-66 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-67 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-38—Primary ITS Results (Measure 34: Professional PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$602.26***	<0.001	$602.97***	<0.001
Baseline monthly trend	0.46%***	<0.001	0.46%***	<0.001
Level change at initial implementation	2.67%	0.362	2.59%	0.380
Change in monthly trend – initial implementation	-0.92%***	<0.001	-0.92%***	<0.001
Level change at full implementation	2.74%	0.537	3.55%	0.431
Change in monthly trend – full implementation	0.47%	0.182	0.13%	0.838

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-66—Illustration of ITS Analysis (Measure 34: Professional PMPM Costs Among Beneficiaries with an SUD)

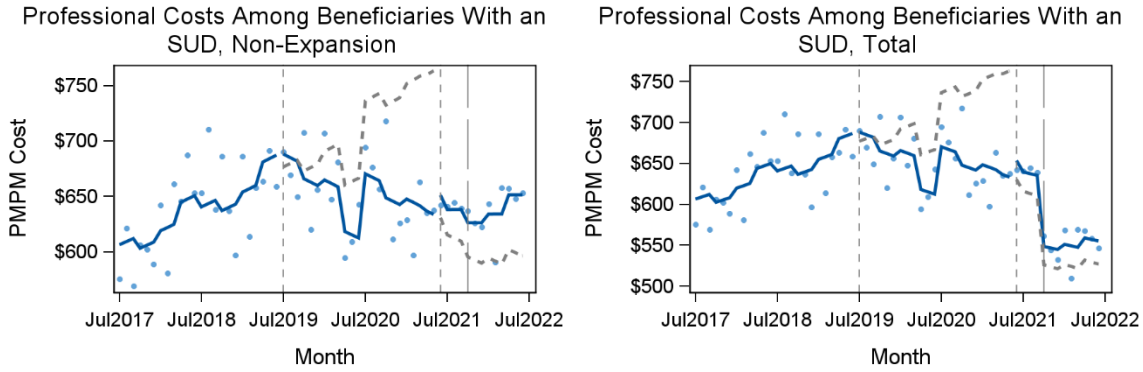
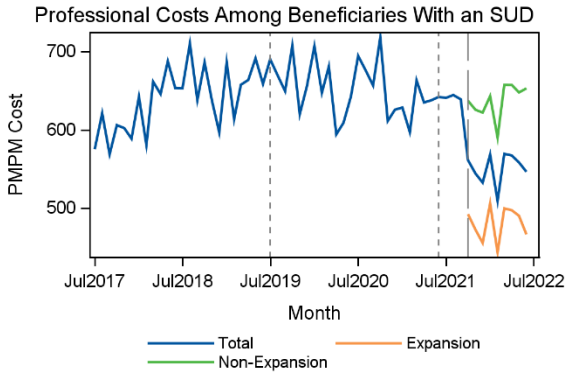


Figure 5-67—Measure 34: Professional PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations



Pharmacy PMPM Costs Among Beneficiaries with an SUD

Pharmacy costs for non-expansion SUD beneficiaries increased by an average of 1.79 percent per month during the baseline period (p<0.001). Following initial implementation, the trend in pharmacy costs declined by an average of 2.45 percent per month compared to projected costs had the baseline trend continued, which was a statistically significant change (p<0.001). Following the full implementation period, the trend in pharmacy costs increased by an average of 1.07 percent per month compared to projected costs had the initial implementation trend continued, which was statistically significant at the 10 percent level (p=0.080). These results are consistent

with expectations, given that the full implementation of the Waiver expanded MAT/OTP coverage which would be reflected in higher pharmacy costs.

Table 5-39 shows the primary results from the ITS analysis. Full regression results are available in Appendix A. Figure 5-68 illustrates the model-based average rate in each month (blue line) and projected rates had the baseline trend and initial implementation trend (grey dashed lines) continued. Figure 5-69 displays the average rate in the expansion population (orange) compared to the non-expansion (green) and total (blue) populations from July 2017 to June 2022.

Table 5-39—Primary ITS Results (Measure 34: Pharmacy PMPM Costs Among Beneficiaries with an SUD)

	Non-Expansion		Total	
Variable	Estimate	*p*-value	Estimate	*p*-value
Intercept	$234.45***	<0.001	$234.91***	<0.001
Baseline monthly trend	1.79%***	<0.001	1.83%***	<0.001
Level change at initial implementation	12.72%**	0.017	11.63%**	0.017
Change in monthly trend – initial implementation	-2.45%***	<0.001	-2.45%***	<0.001
Level change at full implementation	-4.14%	0.575	-2.64%	0.701
Change in monthly trend – full implementation	1.07%*	0.080	2.52%**	0.015

*p< 0.1, **p<0.05, ***p<0.001
Note: Full model results are presented in Appendix A.

Figure 5-68—Illustration of ITS Analysis (Measure 34: Pharmacy PMPM Costs Among Beneficiaries with an SUD)

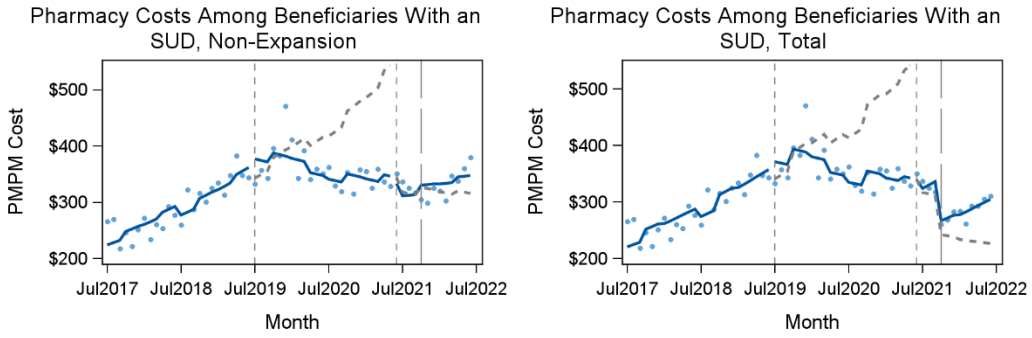
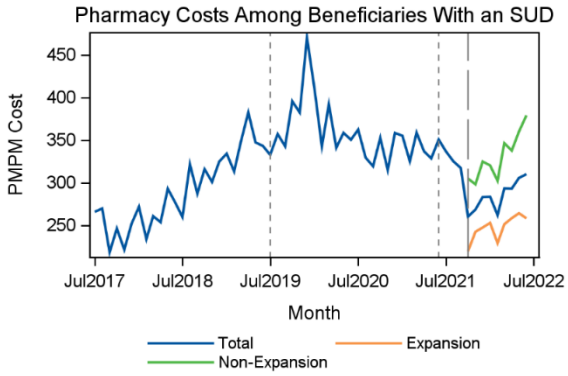


Figure 5-69—Measure 34: Pharmacy PMPM Costs Among Beneficiaries with an SUD Trend Over Time; Non-Expansion, Total and Expansion Populations



The monthly trends in total costs and costs separated by category of service all decreased following initial implementation of the Waiver, and these decreases were significant for total, OP, ED OP, non-ED OP, professional, and pharmacy costs. However, after full implementation of the Waiver, there were no significant decreases in the monthly trend in total costs or in any costs separated by category of service compared to projected costs had the initial implementation trend continued. Furthermore, ED OP, professional, and pharmacy costs increased following full implementation, with the relative increase in the monthly trend for pharmacy costs found to be statistically significant. Overall, though the monthly trend in costs significantly decreased during the initial implementation period, there was no significant decrease in the monthly trend in costs during the full implementation period. While the analysis stratified by category of service provides valuable insight, the hypothesis is framed to directly address the total cost of care; therefore, the significant decrease in the monthly trend in total costs following the initial implementation of the Waiver, along with the non-significant findings in total costs following the full implementation period leads to the conclusion that this measure supports the hypothesis that the Waiver will reduce or maintain total cost of SUD-related care.

Measure 34 Conclusion: Supports the hypothesis

6. Conclusions

The Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) allowed Nebraska to make capitated payments for stays in Institutions for Mental Disease (IMD) regardless of the average length of stay (ALOS) and provide coverage for medically monitored inpatient withdrawal (MMIW), medication-assisted treatment (MAT), and opioid treatment program (OTP) services. Table 6-1 presents the criteria used to determine whether results supported the hypothesis for each measure. Table 6-2 summarizes the conclusions across all measures, organized by aim, evaluation question, and hypothesis.

Table 6-1—Measure Conclusion Criteria

Conclusion	Criteria
Supports	• Statistical testing results were significant in a favorable direction. • For hypotheses stated as maintaining the status quo, statistical testing results were not significant for both implementation periods • For measures without statistical testing, there was conclusive evidence of moderate to large, sustained improvements in the results.
Neither supports nor fails to support (NS/FS)	• Statistical testing results were ambiguous across both implementation periods. • For measures without statistical testing, there was no conclusive evidence of moderate to large, sustained increases or decreases in the results.
Does not support	• Statistical testing results were significant in an unfavorable direction. • For hypotheses stated as a directional change, statistical testing results were not significant for both implementation periods. • For measures without statistical testing, there was conclusive evidence of moderate to large, sustained worsening in the results.
Insufficient data	• There were no pre-implementation data or insufficient data points during the Waiver implementation period to make a determination of increases/decreases in rates directly attributable to the Waiver.

Table 6-2—Summary of Results by Aim, Evaluation Question, Hypothesis, and Measure

Measure Number	Measure Name	Results Support Hypothesis
Aim One: Improve Access to Health Care for Beneficiaries with an SUD		
Evaluation Question 1: Did the demonstration improve access to healthcare for beneficiaries with an SUD?		
Hypothesis 1: The demonstration will increase access to evidence-based SUD treatment reflected in increased utilization.		
1	Percentage of Beneficiaries Receiving Any SUD Treatment Service	Yes
2	Percentage of Beneficiaries Who Use Residential Services for SUD	Yes
3	Percentage of Beneficiaries Who Use Withdrawal Management Services	No
4	Percentage of Beneficiaries Who Have a Claim for MAT for SUD	Yes
5	Average Number of IMD Stays for SUD	Insufficient Data
6	Average Number of Days of IMD Treatment for SUD	Insufficient Data
7	Average Length of Stay of IMD Stays for SUD	Insufficient Data

Measure Number	Measure Name	Results Support Hypothesis
Hypothesis 2: The demonstration will increase access to evidence-based SUD treatment, reflected in increased capacity.		
8	Number of Providers Enrolled in Medicaid and Who Deliver SUD Services	Yes
9	Number of Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services	Insufficient Data
10	Number of Beds Available in IMD Facilities Providing SUD Services	Insufficient Data
11	Number of Outpatient Facilities Offering Detoxification	Insufficient Data
12	Number of Facilities Offering Opioid-Specific Detoxification	Insufficient Data
13	Opioid Treatment Programs	Insufficient Data
14	Outpatient Facilities Offering OTPs	Insufficient Data
15	Residential (Non-Hospital) Facilities Offering OTPs	Insufficient Data
16	Medication-Assisted Opioid Therapy Provided at Facilities With OTPs	Insufficient Data
17	Any Type of MAT	Insufficient Data
18	Needing But Not Receiving Treatment at a Specialty Facility for Illicit Drug/SUD in the Past Year	Insufficient Data
Hypothesis 3: The demonstration will increase access to care for physical health conditions among beneficiaries with an SUD.		
19	Percentage of Medicaid Beneficiaries with an SUD Who Had an Ambulatory or Preventive Care Visit	No
Aim Two: Improve Quality of Care for Beneficiaries with an SUD		
Evaluation Question 1: Did the demonstration improve the quality of SUD treatment?		
Hypothesis 1: The demonstration will improve rates of identification, initiation, and engagement in treatment for SUD.		
20	Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis	No
21	Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit	NS/FS
Hypothesis 2: The demonstration will improve rates of adherence to and retention in treatment for SUD.		
22	Continuity of Pharmacotherapy for OUD	Yes
Hypothesis 3: The demonstration will reduce ED use for SUD.		
23	Average Number of ED Visits for SUD	Yes
Hypothesis 4: The demonstration will reduce readmissions for SUD.		
24	30-Day Readmission	No
Hypothesis 5: The demonstration will reduce overdose deaths, particularly those due to opioids.		
25	Rate of Overdose Deaths, Overall and Due to Opioids	No
Aim Three: Maintain or Reduce Costs		
Evaluation Question 1: Did the demonstration maintain or reduce total cost of care?		
Hypothesis 1: The demonstration will reduce inpatient hospitalization and ED use for SUD.		
26	Average Number of Inpatient Stays for SUD	Yes
27	Average Number of Days of Inpatient Hospitalization for SUD	Yes
28	Average Length of Stay of Inpatient Hospitalization for SUD	No

Measure Number	Measure Name	Results Support Hypothesis
Hypothesis 2: The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with an SUD.		
29	Average Number of Inpatient Stays for Any Cause	Yes
30	Average Number of Days of Inpatient for Any Cause	Yes
31	Average Length of Stay of Inpatient Hospitalization for Any Cause	Yes
32	Average Number of ED Visits for Any Cause	NS/FS
Hypothesis 3: The demonstration will reduce or maintain total cost of SUD-related care.		
33	PMPM Cost for SUD Treatment	Yes
Hypothesis 4: The demonstration will reduce or maintain total cost of care.		
34	PMPM Cost	Yes

Note: ED: emergency department; IMD: institution for mental diseases; MAT: medication assisted treatment; NS/FS: neither supports nor fails to support the hypothesis; OTP: opioid treatment program; OUD: opioid use disorder; PMPM: per member per month; SUD: substance use disorder

Aim One

Aim One, Evaluation Question 1 assesses whether the Waiver improved access to healthcare for beneficiaries with an SUD. Evaluation of this question was complicated by the coronavirus disease 2019 (COVID-19) public health emergency (PHE) and Medicaid expansion, two events that coincided with the initial implementation period of the Waiver, and close enough in time to the full implementation to preclude disentangling the effects of all events. The COVID-19 PHE impacted healthcare utilization as social distancing guidelines, mandated shut-downs, and stay-at-home orders were in effect. Medicaid expansion made it possible for people under the age of 65 who earn up to 138 percent of the federal poverty level (FPL) to receive Medicaid health insurance coverage. Expansion confounds assessment of the Waiver impact as increases in utilization could be a result of the large influx of members needing SUD services.

Successes

Several measures indicated support for hypotheses that the Waiver would increase access to evidence-based SUD treatment reflected in increased utilization (Hypothesis 1) and increased capacity (Hypothesis 2):

- An increased percentage of beneficiaries with an SUD who received any SUD treatment service
- Improved rates of residential service utilization for an SUD
- An increased percentage of beneficiaries with an SUD who had a MAT claim for an SUD
- An increasing number of Medicaid providers delivering SUD services

Following initial implementation of the Waiver that extended coverage to IMD stays of any duration, there were potential improvements in the average number of IMD stays for an SUD and average number of days of IMD treatment for an SUD among beneficiaries with an SUD. Additionally, the ALOS of IMD stays for an SUD also stabilized around the statewide goal of 30 days. The number of beds available in IMD facilities providing SUD services also trended upward. However, due to the lack of pre-implementation data or a viable comparison group, these improvements cannot be attributed directly to the Waiver.

Several survey measures using data from the Substance Abuse and Mental Health Services Administration (SAMHSA), the National Survey on Drug Use and Health (NSDUH), and the National Survey of Substance Abuse Treatment Services (N-SSATS) also showed promise as rates trended in a desired direction. The treatment gap for beneficiaries with an illicit drug or substance use disorder is decreasing in Nebraska, although only pre-implementation data were available. There were slight improvements in the number of facilities providing any type of MAT per 100,000 adult Nebraskans. While the rate of facilities with OTPs per 100,000 adults in Nebraska remains lower than the national average, all Nebraska OTPs are being offered in outpatient (OP) facilities, and all OTPs are providing medication-assisted opioid treatment. However, no statistical testing was conducted as data for these measures were only available prior to the full implementation of the MAT/OTP component of the Waiver. As additional data points become available, Health Services Advisory Group, Inc. (HSAG) will continue its assessment of these measures for the Summative Evaluation Report.

Challenges

There were some notable challenges to achieving Aim One:

- Reduced percentages of beneficiaries who use withdrawal management services following the full implementation of the Waiver and MMIW service category.
- Lower rates of beneficiaries with an SUD who had an ambulatory or preventive care visit
- Zero residential (non-hospital) facilities offering OTPs

Evidence of decreasing percentages of beneficiaries who use withdrawal management services following full Waiver implementation in which coverage for MMIW became available may be indicative of a substitution effect; it is possible that the current measure does not capture treatment codes for the new services, and that members are switching from existing withdrawal management services to more clinically appropriate MMIW services. Alternatively, challenges that providers noted in providing these services (American Society of Addiction Medicine [ASAM] Level 3.7) may have temporarily impacted the provision of existing withdrawal management services.

The hypothesis that the Waiver will increase access to care for physical health conditions among beneficiaries with an SUD was not supported by increased utilization of ambulatory and preventive care; however lower rates of preventive and primary care may be largely influenced by COVID-19 PHE impacts during 2020 and 2021.

The number of OP facilities offering detoxification per 100,000 adults in Nebraska and the number of facilities offering opioid-specific detoxification per 100,000 adults in Nebraska continue to fall below the national average.

Aim Two

Successes

Aim Two, Evaluation Question One assesses whether the Waiver improved the quality of SUD treatment. Through activities promoting evidence-based assessment and referral, standardizing assessment and placement criteria for patients, establishing qualifications for residential providers, and assuring compliance with treatment standards, the Waiver is hypothesized to improve the appropriateness and continuity of care for SUD beneficiaries. Several measures support the hypotheses:

- Increased rates of adherence to and retention in treatment for an SUD
- Reduction in the average number of emergency department (ED) visits for an SUD among beneficiaries with an SUD

Challenges

Key challenges were also present:

- An increasing trend in the rate of overall overdose deaths and opioid-specific overdose deaths in Nebraska from 2017 to 2020
- Increased rates of 30-day readmission for an SUD
- Decline in the percentage of beneficiaries initiating treatment within 14 days of a new SUD diagnosis

The increased rate of overdose deaths was exacerbated by the COVID-19 PHE, as was seen across the country during this time.[6-1] Compared to national rates, Nebraska experienced a greater increase in overdose deaths between 2019 and 2020; this may be explained by studies that show a disproportionate impact of the pandemic on drug use patterns among people living in rural areas.[6-2]

Although initiation of treatment for an SUD declined during this period, results on engagement in SUD treatment were mixed. The percentage of beneficiaries who initiated treatment and who had two or more additional services for an SUD within 34 days of the initiation visit improved during the initial implementation period, before worsening during the full implementation period.

Aim Three

Aim Three focuses on cost maintenance as an intended outcome of treating patients in the most appropriate settings and asks whether the Waiver maintained or reduced total cost of care. It is hypothesized that the increased cost of SUD treatment as a result of higher utilization (increase in claims for treatment, longer IMD stays, etc.) will be balanced out by reduced acute care utilization. Thus, the Waiver is hypothesized to reduce inpatient (IP) hospitalization and ED use specifically for an SUD (Hypothesis 1) as well as overall hospital admissions and ED visits for beneficiaries with an SUD (Hypothesis 2) and ultimately result in maintained or reduced total cost of SUD-related care (Hypothesis 3) and overall total cost of care (Hypothesis 4).

Successes

There was strong evidence of a decrease in IP hospitalizations following implementation of the Waiver, as evidenced by:

6-1 Centers for Disease Control and Prevention. Overdose Deaths Accelerating During COVID-19. Available at: https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html. Accessed on: Mar. 7, 2023.

6-2 Walters SM, Bolinski RS, Almirol E, et al. (2022) "Structural and community changes during COVID-19 and their effects on overdose precursors among rural people who use drugs: a mixed-methods analysis," *Addiction Science & Clinical Practice* 17(24); Available at: https://ascpjournal.biomedcentral.com/articles/10.1186/s13722-022-00303-8. Accessed on: Mar 24, 2023

- Reductions in the average number of IP hospitalizations and average number of days of IP hospitalization among all beneficiaries ages 19–64, for an SUD specifically.
- Reductions in the average number, average number of days and ALOS of IP hospitalization for any cause among beneficiaries with an SUD diagnosis.

Challenges

The ALOS of IP hospitalization for an SUD did not demonstrate any statistically significant results; therefore, did not support the hypothesis that the Waiver would reduce IP hospitalization and ED use for beneficiaries with an SUD. The average number of ED visits for any cause among beneficiaries with an SUD diagnosis demonstrated a relative decrease in the trend upon initial implementation and a relative increase in the trend upon full implementation. Therefore, this measure neither supported nor failed to support the hypothesis that the Waiver would reduce IP hospitalization and ED use or beneficiaries with an SUD.

In general, the results of the analysis on cost for SUD treatment supported the hypothesis that the Waiver would reduce or maintain total cost of SUD-related care (Hypothesis 3). A decrease in the average SUD-IMD cost at the start of each implementation period suggests trending of SUD-IMD costs in the desired direction, but the change in monthly trend during both implementation periods was not statistically significant. Similarly, there were no significant changes in the monthly cost trend for other SUD costs during the implementation periods, and non-SUD costs demonstrated a significant decrease in the monthly cost trend during the initial implementation period, adding further support for the hypothesis of reducing or maintaining cost of SUD-related care.

Similarly, analysis of the total cost of care and costs stratified by category of service also supported the hypothesis that the Waiver would reduce or maintain total cost of care overall (Hypothesis 4). Specifically, ED and IP costs demonstrated continued cost reductions through the Waiver period; in particular, statistically significant decreasing monthly trends during the initial implementation period compared to projected costs had the baseline period continued suggest support for Hypothesis 4. Analysis of total costs among beneficiaries with an SUD demonstrated that costs were overall decreasing during the implementation period, with a significant relative decrease in the monthly trend following initial implementation of the Waiver, providing support for Hypothesis 4.

7. Interpretations, Policy Implications, and Interactions with Other State Initiatives

Interpretations

The findings of the evaluation demonstrate that beneficiaries increased utilization of substance use disorder (SUD) treatment services, particularly residential services, and medication-assisted treatment (MAT) throughout the Nebraska Section 1115 SUD Demonstration Waiver (the Waiver) period. This increase may reflect the Waiver's emphasis on expanding residential providers' treatment methods and increasing the number of practitioners trained on MAT. Analysis of the number of Medicaid providers delivering SUD services showed an approximately 21 percent increase from the baseline years to 2022 and may reflect provider capacity building efforts.

The number of Institutions for Mental Disease (IMD) stays and number of days of IMD treatment increased between the start of the initial implementation period and the start of the full implementation period in alignment with the Waiver's goals. There were also improvements in meeting the statewide target for average length of stay (ALOS) in an IMD of 30 days; six out of the last eight months of the Waiver period were below 30 days and two months were only slightly above 30 days, indicating that the ALOS stabilized around the statewide goal of 30 days at the time of evaluation.

The evaluation showed a significant decrease in both the level and trend of emergency department (ED) visits for an SUD at the time of full implementation, suggesting evidence of the Waiver's impact on reducing ED utilization among beneficiaries with an SUD. As the full implementation of the Waiver effected increased availability of opioid treatment programs (OTPs) and more facilities providing MAT statewide, this decline may be representative of a shift away from reliance on EDs for SUD treatment. Decreasing ED costs during the initial implementation period lends additional support for reduced ED utilization by beneficiaries with an SUD.

The Waiver was also associated with improvements in inpatient (IP) stays for an SUD and IP stays for any cause. The average number of stays, average number of days, and ALOS for SUD-specific and any-cause IP stays declined during the study period. Furthermore, examination of inpatient costs demonstrated a continued reduction in costs throughout the Waiver period.

Finally, pharmacy costs were increasing during the baseline period but began to decrease during the initial implementation period. Upon full implementation of the MAT/OTP services, pharmacy costs increased again as would be expected with wider accessibility of MAT treatment.

Policy Implications

COVID-19 PHE

The coronavirus disease 2019 (COVID-19) public health emergency (PHE) added layers of complexity to program evaluations, with only a few elements not impacted by the pandemic. Even with the most significant impacts confined mainly to 2020, lingering COVID-19 PHE impacts were identified through 2021. Due to the unprecedented nature of the PHE, very little research is available to reliably predict the trajectory of PHE impacts beyond those accompanying the shutdown and restrictions in 2020. Separating the impacts of the Waiver from

those of the PHE will be facilitated by the availability of additional data to identify and control for the trajectory of the PHE and its impacts on the demonstration.

There are likely COVID-19 PHE impacts that have not yet been fully realized, particularly around service needs that were postponed during the PHE and any resurgences of the virus. These impacts will likely continue to impact Section 1115 Demonstration Waivers for several years.

The COVID-19 PHE impacted two primary dimensions of the evaluation:

1. Overdose deaths
2. Provision of telehealth

The rate of overdose deaths, including those related to opioids, increased nationally and in Nebraska due to the COVID-19 PHE. Although Nebraska's rate of overdose deaths, including those due to opioids, was significantly lower than the national rate, findings from this evaluation may assist the State in addressing rates of overdose deaths. While the data on detoxification facilities, OTPs, and MAT were only available for the period prior to full implementation, the number of OTPs per 100,000 adult residents was less than half that of the rate nationwide. Moreover, at the time of evaluation, the State did not have any residential facilities offering OTP. Forthcoming data that will be used in the Summative Evaluation Report should provide additional evidence as to the number of OTPs in the State after the full implementation of the Waiver. In the meantime, however, the State could diversify and reduce barriers to bringing additional OTPs operational as necessary. Additionally, the number of facilities per 100,000 adult residents offering detoxification, including detoxification specific to opioids, fell below the national rate with a widening gap between 2017 and 2020.

The COVID-19 PHE also impacted the provision of care by shifting delivery from in-person to telehealth, which may have affected the quality of care received. Some providers reported that patient care was negatively impacted, for example through lack of patient accountability. Providers also described technological costs associated with using telehealth platforms. Because providers also noted that telehealth improved the experience of care, the State and managed care organizations (MCOs) could assist providers to maximize the potential of telehealth services by facilitating technology infrastructure where possible and/or consider temporary revisions to reimbursement rates for telehealth services to cover fixed costs of this transition.

Provision of Waiver Services

One key component of the Waiver was to expand the continuum of services available to treat SUD among Medicaid beneficiaries, including American Society of Addiction Medicine (ASAM) Level 3.7 withdrawal management (medically monitored inpatient withdrawal [MMIW] management). Findings from the Interim Evaluation Report showed a significant decrease in the rate of withdrawal management upon implementation of these services in June 2021. This could be reflective of a change in billing for services, or this may reflect challenges that some providers noted during interviews. Some providers noted difficulties in understanding and obtaining proper credentialing for these new services, which may have temporarily discouraged providers from billing other withdrawal management services that had previously been covered under the Waiver if they did not fully understand the changes. The State may consider working with MCOs or providers to identify barriers in credentialing and clarify the distinction between new and existing withdrawal management services, if necessary. Although providers indicated the Waiver did not impact existing services, this could assure providers who are having difficulties obtaining credentials for MMIW that they could continue serving members under the status quo. Additional data in the Summative Evaluation Report will assist in identifying the impact of the Waiver on provision of MMIW services.

Interactions with Other State Initiatives

The Waiver is not the only tool that the Nebraska Department of Health and Human Services (DHHS) is using to address SUD in the State. The Waiver can augment other State initiatives through leveraging resources provided under the demonstration. For example, providers offering new Waiver services such as MAT and OTP can encourage patients to leverage OpiRescue, if they are not already using it, to increase knowledge of overdoses and treatment options for themselves or others. The following section outlines other State initiatives that interact with the goals of the Waiver.

Background on Other State Initiatives

Department of Health and Human Services Programs

The State of Nebraska, including DHHS, operates SUD and opioid use disorder (OUD) treatment and prevention initiatives outside of the Waiver. Since January 1, 2018, dispensed prescriptions in Nebraska have been reported to the Nebraska Prescription Drug Monitoring Program (PDMP).[7-1] The PDMP securely stores prescription information on the health information exchange (HIE) where it is made publicly available to healthcare professionals across the State. As of 2020, 12,371 Drug Enforcement Agency (DEA)-registered prescribers and 454 DEA-registered dispensers were users of the PDMP.[7-2] DHHS offers free clinician continuing education (CE) videos and assessments to support the use of the PDMP and discuss clinician roles around naloxone and pain management.[7-3]

DHHS, along with the Nebraska Medical Association (NMA), provides education to healthcare providers about opioid prescribing and treatment needs through SafePrescribe.[7-4] Physicians and pharmacists trained on the subject provide other prescribers with brief, one-on-one educational sessions. SafePrescribe topics include co-prescribing naloxone with opioid prescriptions; using the Nebraska PDMP; avoiding and reducing co-prescribing benzodiazepines and opioids together; and medications used for addiction treatment, including OUD and alcohol use disorder (AUD).

DHHS, alongside other community and State partners, is a member of the Nebraska Medication Education for Disposal Strategies (MEDS) Coalition.[7-5] The Nebraska MEDS Coalition focuses on educating patients about the safe disposal of prescription and over-the-counter medications. The Nebraska MEDS Coalition implements educational initiatives and supports a medication disposal program through an extensive network of pharmacies, allowing patients to turn in expired or unused medications at participating locations. The pharmacies are located

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7-1 Nebraska Department of Health and Human Services. Drug Overdose Prevention – PDMP Access. Available at: https://dhhs.ne.gov/Pages/Drug-Overdose-Prevention-PDMP-Access.aspx. Accessed on: Mar. 16, 2023.

7-2 United States Department of Justice. Prescription Drug Monitoring Program: Nebraska State Profile (2021). Available at: https://www.ojp.gov/library/publications/prescription-drug-monitoring-program-nebraska-state-profile-2021. Accessed on: Mar. 16, 2023.

7-3 Nebraska Department of Health and Human Services. Clinician Continuing Education. Available at: https://dhhs.ne.gov/Pages/Drug-Overdose-Prevention-Clinician-Continuing-Education.aspx. Accessed on: Mar. 16, 2023.

7-4 Nebraska Medial Association. SafePrescribe. Available at: https://www.nebmed.org/resources/safeprescribe. Accessed on: Mar. 16, 2023.

7-5 Nebraska MEDS Coalition. Who We Are. Available at: https://www.nebraskameds.org/whoweare. Accessed on: Mar. 16, 2023.

across the State, from Scottsbluff in western Nebraska to the eastern city of Omaha. In 2020, the Nebraska MEDS Coalition collected 27,506 pounds of medication.[7-6]

The DHHS Naloxone Distribution Program distributes naloxone to individuals at risk of opioid overdose or who know someone at risk of an opioid overdose.[7-7] Nebraskans can visit participating pharmacies to receive naloxone at no cost. As of February 2022, 52 pharmacies across the State were active participants in the DHHS Naloxone Distribution Program, with locations coming soon in 10 additional cities.

The DHHS Choose You campaign advocates for individuals to lead a substance-free life by featuring fellow Nebraskans telling their personal success stories living substance-free. The individuals in the campaign come from across the State, with histories of substance use including binge drinking, using illegal drugs, and misusing prescription drugs. Choose You materials, including posters and videos, are published on the DHHS website and social media channels to spread messaging about becoming or remaining substance-free.[7-8]

Division of Behavioral Health Programs

The DHHS Division of Behavioral Health (DBH) offers additional behavioral health trainings in partnership with the University of Nebraska Public Policy Center.[7-9] Topics covered include peer support services, cognitive behavioral therapy for SUD treatment, and maximizing telehealth in a clinical setting. Nebraska is host to Project ECHO (Extension for Community Healthcare Outcomes) courses. Project ECHO provides an opportunity for healthcare providers across the State to obtain clinical advice, recommendations, and knowledge from specialists and subject matter experts. The University of Nebraska Medical Center (UNMC) hosts the free Pain and Substance Use Disorder ECHO twice a month.[7-10] The Pain and Substance Use Disorder ECHO targets healthcare providers who treat patients with pain or SUD, teaching them about substance use and pain management cases, trends, and treatments. The Pain and Substance Use Disorder ECHO aims to develop providers who can identify evidence-based medications available to treat patients with an SUD, discuss which patients are appropriate for medication management for the treatment of SUD, and describe how pairing psychotherapeutic and psychosocial interventions with medications can impact patient outcomes.

DBH hosts advisory groups focused on SUD prevention. The Prevention Advisory Council convenes three times per year to promote mental health and SUD prevention.[7-11] The Prevention Advisory Council aims to accomplish DBH's five-year strategic plan, promote mental health; encourage partnerships and collaboration among providers; grow the workforce; and train leadership to implement effective policies, practices, and programs. The

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7-6 Nebraska Department of Health and Human Services. Every Day Can Be A Drug Take-Back Day In Nebraska. Available at: https://dhhs.ne.gov/Pages/Every-Day-Can-Be-a-Drug-Take-Back-Day-in-Nebraska-2021.aspx. Accessed on: Mar. 16, 2023.

7-7 Nebraska Department of Health and Human Services. Naloxone Distribution Program. Available at: https://dhhs.ne.gov/Behavioral%20Health%20Documents/NaloxoneMap.pdf. Accessed on: Mar. 16, 2023.

7-8 Nebraska Department of Health and Human Services. Choose You Campaign. Available at: https://dhhs.ne.gov/Pages/Choose-You-Campaign.aspx. Accessed on: Mar. 16, 2023.

7-9 Nebraska Department of Health and Human Services. Behavioral Health Trainings. Available at: https://dhhs-dbhtraining.unl.edu/. Accessed on: Mar. 16, 2023.

7-10 University of Nebraska Medical Center. Project ECHO. Available at: https://www.unmc.edu/psychiatry/outreach/project-echo.html. Accessed on: Mar. 16, 2023.

7-11 Nebraska Department of Health and Human Services. Prevention Advisory Council. Available at: https://dhhs.ne.gov/Pages/Prevention-Advisory-Council.aspx. Accessed on: Mar. 16, 2023.

State Advisory Committee on Substance Abuse Services convenes three times per year and was established in law to advise DBH on substance abuse service system strengths and opportunities.

Other State Initiatives

Additionally, Nebraska promotes OpiRescue, a free smartphone application that aids Nebraskans in stopping and preventing opioid overdoes.[7-12] OpiRescue guides users through steps to be taken if they encounter an opioid overdose, provides locations distributing naloxone and treatment, and publishes educational videos about MAT.

The Drug Utilization Review (DUR) Board, made up of a minimum of 16 active pharmacists, pharmacy students, pharmacy consultants and physicians, aims to improve the quality of pharmacy services and ensure cost-effective medication therapy for recipients of Nebraska Medicaid.[7-13] The DUR Board evaluates claims data in order to assess the utilization, quality, appropriateness, and cost of prescribed medications.

On October 14, 2016, nearly 300 leaders in medicine, public health, social services, governmental policy, and law enforcement gathered for the Charting the Road to Recovery: Nebraska's Response to Opioid Abuse summit.[7-14] The summit, a collaboration between the United States Attorney's Office for the District of Nebraska, UNMC, DHHS, and the Nebraska Attorney General's Office, aimed to address the misuse of prescription opioids in Nebraska and reduce illicit opioid abuse. The summit partners maintained close collaboration following the summit, forming the Nebraska Coalition to Prevent Opioid Abuse. The Nebraska Coalition to Prevent Opioid Abuse most recently released a Strategic Initiatives Update in 2020, which described the recent steps taken by Nebraska to accomplish the strategic purpose of reducing the incidence of the misuse of prescription and illicit opioids within the State. One such step was the development of the Addiction Medicine Fellowship in August 2019, a UNMC and DHHS partnership.[7-15] The program provides fellows with a yearlong comprehensive training in addiction medicine, rotating through an intensive outpatient (IOP) program and a clinic for patients with co-occurring SUD and psychiatric illness. The Addiction Medicine Fellowship emphasizes comprehensive and evidence-based care in order to develop fellows efficient in areas such as the treatment of patients with SUDs along a continuum of care; collaboration with other professionals who work with SUD patients; and matching patient treatment needs with the appropriate levels of intervention, including crisis services, hospitalization, and SUD treatment programs.

7-12 Nebraska Department of Health and Human Services. Drug Overdose Prevention – Naloxone. Available at: https://dhhs.ne.gov/Pages/Drug-Overdose-Prevention-Naloxone.aspx#:~:text=Drug%20Overdose%20Prevention-Naloxone%20The%20Nebraska%20Department%20of%20Health,access%20it%2C%20and%20how%20to%20administer%20the%20drug. Accessed on: Mar. 16, 2023.

7-13 Nebraska Department of Health and Human Services. Drug Utilization Review. Available at: https://dhhs.ne.gov/Pages/Drug-Utilization-Review.aspx#:~:text=The%20Nebraska%20Drug%20Utilization%20Review%20%28DUR%29%20Board%20consists,pharmacist%20consultants%20from%20the%20Nebraska%20Medicaid%20Drug%20Program. Mar. 16, 2023.

7-14 Nebraska Coalition to Prevent Opioid Abuse. Strategic Initiatives Update 2020. Available at: https://ago.nebraska.gov/sites/ago.nebraska.gov/files/doc/Strategic%20Initiatives%20Update%202020.pdf. Accessed on: Mar. 16, 2023.

7-15 University of Nebraska Medical Center. Addiction Medicine Fellowship. Available at: https://www.unmc.edu/familymed/fellowship/addiction-med/index.html. Accessed on: Mar. 16, 2023.

Grants and Funding

In April 2020, the Nebraska Legislature passed Legislative Bill (LB) 1124, the Opioid Prevention and Treatment Act.[7-16] The Opioid Treatment and Prevention Act provides for the use of dedicated revenue for opioid-disorder-related treatment and prevention through establishing the Nebraska Opioid Recovery Fund, into which all settlement funds received on behalf of the State must be deposited. Nebraska formed the Nebraska Opioid Settlement Remediation Advisory Committee because of the 2020 national opioid-related settlement agreements with pharmaceutical distributors. The committee was tasked with establishing criteria for identifying needs and prioritizing effective responses using the settlement funds placed into the Opioid Recovery Fund.

From fiscal year (FY) 2019 through FY 2022, Nebraska received over $70 million in substance abuse funding from the Substance Abuse and Mental Health Services Administration (SAMHSA).[7-17] One grant awarded by SAMHSA was the State Opioid Response Grant (SOR). Nebraska uses SOR funds to: publish training videos for chapters in the Nebraska Pain Management Guidance Document, a resource to providers treating chronic and acute pain; train providers and stakeholders through Project ECHO; and fund three outreach workers to aid in connecting the OUD population with Oxford House recovery homes, which are self-run, self-supporting addiction recovery homes.[7-18] SOR was used to fund Stop Overdose Nebraska, a website that provides public education on naloxone to save lives in situations of an opioid overdose.[7-19]

The Overdose Data to Action (OD2A) Grant, funded by the Centers for Disease Control and Prevention (CDC), supports funded jurisdictions, including DHHS, in collecting high-quality, comprehensive, and timely data on nonfatal and fatal overdoses.[7-20] OD2A focuses on using those data to inform prevention and response efforts. DHHS used OD2A funds to implement the Nebraska State Unintentional Drug Overdose Reporting System (SUDORS).[7-21] SUDORS functions include the collection and dissemination of descriptions of drug overdose death circumstances. Data are collected from death certificates, medical examiner and coroner reports, and forensic toxicology reports entered into the system.[7-22] OD2A funding was also used for the Post-Mortem Toxicology Testing Program, which aids county attorneys in Nebraska with toxicology testing.[7-23] The program

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7-16 Nebraska Attorney General Office. Nebraska Opioid Settlement Remediation Advisory Committee. Available at: https://ago.nebraska.gov/nebraska-opioid-settlement-remediation-advisory-committee#:~:text=Nebraska%E2%80%99s%20Opioid%20Prevention%20and%20Treatment%20Act%20In%202020%2C,of%20dedicated%20revenue%20for%20opioid-disorder-related%20treatment%20and%20prevention.%E2%80%9D. Accessed on: Mar. 16, 2023.

7-17 Substance Abuse and Mental Health Services Administration. SAMHSA Grant Awards By State. Available at: https://www.samhsa.gov/grants-awards-by-state. Accessed on: Mar. 16, 2023.

7-18 Substance Abuse and Mental Health Services Administration. 2021 Report to Congress on the State Opioid Response Grants (SOR). Available at: https://www.samhsa.gov/sites/default/files/2021-state-opioid-response-grants-report.pdf. Accessed on: Mar. 16, 2023.

7-19 Stop Overdose Nebraska. Home. Available at: https://stopodne.com/. Accessed on: Jan. 5, 2023.

7-20 Centers for Disease Control and Prevention. OD2A. Available at: https://www.cdc.gov/drugoverdose/od2a/funded-states.html. Accessed on: Mar. 16, 2023.

7-21 Nebraska Coalition to Prevent Opioid Abuse. Strategic Initiatives Update 2020. Available at: https://ago.nebraska.gov/sites/ago.nebraska.gov/files/doc/Strategic%20Initiatives%20Update%202020.pdf. Accessed on: Mar. 16, 2023.

7-22 Nebraska Department of Health and Human Services. CDC SUDORS Summary of Unintentional and Undetermined Intent Drug Overdose Deaths in Nebraska – 2020. Available at: https://dhhs.ne.gov/Documents/2020%20SUDORS_Summary_NE.pdf. Accessed on: Mar. 16, 2023.

7-23 Nebraska Department of Health and Human Services. Post-Mortem Toxicology Testing Program. Available at: https://dhhs.ne.gov/Documents/Toxicology-Pamphlet.pdf#:~:text=Funded%20by%20the%20Opioid%20Overdose%20Data%20to%20Action,to%20assist%20Nebraska%20county%20attorneys%20with%20toxicology%20testing. Accessed on: Mar. 16, 2023.

covers the cost of supplies, education, and toxicology testing for any death that is suspected to be due to substance use.

COVID-19 Initiatives

Effective March 15, 2020, two days after the President of the United States declared COVID-19 a national emergency, states were able to request the use of Section 1135 waivers. Section 1135 waivers were granted to states through the authority of Section 1135 of the Social Security Act, which permits the United States Health and Human Services Secretary to temporarily waive or modify certain Medicare, Medicaid, and Children's Health Insurance Program (CHIP) requirements to ensure sufficient care and services are provided during a PHE.[7-24] On March 30, 2020, Nebraska submitted a Section 1135 waiver request, which was approved by the Centers for Medicare & Medicaid Services (CMS) on April 2, 2020.[7-25] Nebraska's application included the request to waive:

- Site visits to temporarily enroll a provider.
- Requirements that physicians and healthcare providers must be licensed in the state in which they are providing services.
- Conditions of participation or conditions for coverage for existing providers for facilities for providing services in an alternative setting if the provider's licensed facility has been evacuated.

In addition to the Section 1135 waiver, the Governor of Nebraska declared a series of Executive Orders (EOs) to add healthcare workforce capacity. EO No. 21–12 suspended regulations around credentialing to permit healthcare workers in good standing to practice in Nebraska.[7-26] EO No. 21–15 allowed individuals who are properly and lawfully licensed to engage in practices including SUD and mental health support.[7-27] EO No. 20-27 authorizes DHHS to waive continuing competency requirements for credential holders under the Uniform Credentialing Act (UCA). Notably, EO No. 20-27 deferred client-contact hours for those seeking credentials under the Mental Health Practice Act until December 31, 2020.[7-28] Lastly, EO No 21-18 extended EO No. 21-12 and No. 21-15 to March 31, 2022.[7-29]

As part of the State's response to the ongoing COVID-19 PHE, the American Rescue Plan Act (ARPA) awarded approximately $1.8 billion to grantees under the following three major funds on March 11, 2021:[7-30]

7-24 Centers for Medicare & Medicaid Services. 1135 Waivers. Available at: https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertEmergPrep/1135-Waivers. Accessed on: Mar. 16, 2023.

7-25 Centers for Medicare & Medicaid Services. Section 1135 Waiver Flexibilities – Nebraska Coronavirus Disease 2019. Available at: https://www.medicaid.gov/state-resource-center/disaster-response-toolkit/federal-disaster-resources/89161. Accessed on: Mar. 16, 2023.

7-26 State of Nebraska Office of the Governor. Executive Order No. 21-12. Available at: http://govdocs.nebraska.gov/docs/pilot/pubs/eofiles/21-12.pdf. Accessed on: Mar. 16, 2023.

7-27 State of Nebraska Office of the Governor. Gov. Ricketts Takes Further Action to Add Capacity to Healthcare Workforce. Available at: https://dhhs.ne.gov/Pages/Gov-Ricketts-Takes-Further-Action-to-Add-Capacity-to-Healthcare-Workforce.aspx. Accessed on: Mar. 16, 2023.

7-28 State of Nebraska Office of the Governor. Executive Order No. 20-27. Available at: http://govdocs.nebraska.gov/docs/pilot/pubs/eofiles/20-27.pdf. Accessed on: Mar. 16, 2023.

7-29 State of Nebraska Office of the Governor. Executive Order No. 21-18. Available at: http://govdocs.nebraska.gov/docs/pilot/pubs/eofiles/21-18.pdf. Accessed on: Mar. 16, 2023.

7-30 Nebraska Legislative Fiscal Office. LB 1014 Distribution of the Coronavirus State Fiscal Recovery Fund (CSFRF). Available at: https://nebraskalegislature.gov/pdf/reports/fiscal/2022arpa-csfrf.pdf. Accessed on: Mar. 16, 2023.

- Coronavirus State Fiscal Recovery Fund (CSFRF)—The fund responds to the negative economic impacts created by the COVID-19 PHE, to fiscally support workers performing essential work, and support mental healthcare and SUD needs from March 2021 through March 2024.
- Coronavirus Local Fiscal Recovery Fund—This fund supports mental health and SUD allocated by local cities and counties.[7-31]
- Coronavirus Capital Projects Fund—This fund creates multi-purpose community facilities and infrastructural projects to alleviate the challenges from COVID-19 PHE.[7-32]

7-31 United States Department of Treasury. State and Local Fiscal Recovery. Available at: https://home.treasury.gov/system/files/136/Nebraska_2021-Recovery-Plan_SLT-2222.pdf. Accessed on: Mar. 16, 2023.

7-32 Nebraska Department of Economic Development. Nebraska Capital Projects Fund. Available at: https://opportunity.nebraska.gov/programs/recovery/nebraska-capital-projects-fund/. Accessed on: Mar. 16, 2023.

8. Lessons Learned and Recommendations

Previous sections in this Interim Evaluation Report provide background on the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver); a description of the evaluation questions, hypotheses, measures, data sources, and methodology; results; conclusions; and interpretations. This section of the Interim Evaluation Report presents lessons learned from the evaluation and recommendations for future improvements.

As discussed above, the Waiver expanded the treatment of SUD through three primary mechanisms:

1. Removal of the Institutions for Mental Disease (IMD) exclusion, allowing Medicaid to reimburse IMDs for stays greater than 15 days.
2. Expanding services to cover American Society of Addiction Medicine (ASAM) Level 3.7 medically monitored inpatient withdrawal (MMIW) management, including methadone.
3. Expanding services to cover opioid treatment programs (OTPs) meeting ASAM criteria.

While the Waiver shows promise across several dimensions of care and improvements, there are some lessons learned and recommendations related to the provision of new services stemming from key informant interviews.

ISSUE	Some providers noted difficulties in providing ASAM Level 3.7 medically supervised withdrawal management services.
RECOMMENDATION	The State should continue working with managed care organizations (MCOs) and providers to streamline or expedite the credentialling process. The State could also reiterate to providers that there are no changes to the provision or billing of existing services to reduce any confusion or uncertainty providers may have regarding billing State plan services.

ISSUE	Some providers felt uncomfortable prescribing methadone treatment.
RECOMMENDATION	The State and/or MCOs could assist providers in prescribing methadone treatment, including providing clinical guidelines and recommendations. MCOs could facilitate collaboration among providers and existing methadone treatment facilities to address providers' concerns about lack of experience providing methadone treatment.

State of Nebraska Department of Health and Human Services

Nebraska Substance Use Disorder (SUD) Demonstration Waiver

Interim Evaluation Report, Appendices

April 2024

HSAG HEALTH SERVICES ADVISORY GROUP

Table of Contents

Appendix A. Supplemental Results

Appendix A contains additional results and methodologies used for the Nebraska Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) evaluation. Table A-1 through Table A-16 contain additional interrupted time series (ITS) results.

Table A-1—Percentage of Beneficiaries Receiving Any SUD Treatment Service (Measure 1)

Measure 1: Percentage of Beneficiaries Receiving Any SUD Treatment Service	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	26.35*** *(0.37)*	<0.001	26.42*** *(0.38)*	<0.001
Baseline monthly trend	-0.01 *(0.03)*	0.683	-0.01 *(0.03)*	0.710
Level change at initial implementation	0.75 *(0.84)*	0.375	0.72 *(0.86)*	0.408
Change in monthly trend - initial implementation	0.15** *(0.04)*	0.001	0.15** *(0.04)*	0.001
Level change at full implementation	-0.98 *(1.26)*	0.438	-1.02 *(1.22)*	0.407
Change in monthly trend - full implementation	-0.21*** *(0.06)*	<0.001	-0.13* *(0.07)*	0.081
Medicaid Expansion			0.68 *(0.75)*	0.372
Coronavirus disease 2019 (COVID-19) Lockdown (Quarter [Q] 2 2020)	-4.09*** *(0.56)*	<0.001	-4.00*** *(0.57)*	<0.001
COVID-19 Reopening (Q3 2020 - Q1 2021)	0.57 *(0.72)*	0.435	0.53 *(0.70)*	0.451
Seasonality: Q2	0.75** *(0.33)*	0.028	0.59* *(0.34)*	0.086
Seasonality: Q3	0.14 *(0.52)*	0.787	0.03 *(0.55)*	0.961
Seasonality: Q4	-0.71** *(0.32)*	0.029	-0.75** *(0.33)*	0.027

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-2—Percentage of Beneficiaries Who Use Residential Services for SUD (Measure 2)

Measure 2: Percentage of Beneficiaries Who Use Residential Services for SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	0.89*** (0.12)	<0.001	0.87*** (0.13)	<0.001
Baseline monthly trend	0.01 (0.01)	0.466	0.01 (0.01)	0.459
Level change at initial implementation	0.36** (0.12)	0.003	0.36** (0.12)	0.003
Change in monthly trend - initial implementation	-0.01 (0.01)	0.475	-0.01 (0.01)	0.482
Level change at full implementation	-0.25* (0.14)	0.084	-0.27* (0.16)	0.085
Change in monthly trend - full implementation	0.03** (0.01)	0.022	0.05 (0.04)	0.197
Medicaid Expansion			0.56* (0.29)	0.057
COVID-19 Lockdown (Q2 2020)	-0.46*** (0.06)	<0.001	-0.46*** (0.07)	<0.001
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.05 (0.08)	0.578	-0.05 (0.08)	0.567
Seasonality: Q2	0.15* (0.08)	0.069	0.16* (0.09)	0.064
Seasonality: Q3	0.06 (0.09)	0.492	0.07 (0.09)	0.445
Seasonality: Q4	-0.06 (0.05)	0.262	-0.02 (0.06)	0.749

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-3—Percentage of Beneficiaries Who Use Withdrawal Management Services (Measure 3)

Measure 3: Percentage of Beneficiaries Who Use Withdrawal Management Services	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	0.38*** *(0.06)*	<0.001	0.37*** *(0.07)*	<0.001
Baseline monthly trend	0.01** *(0.00)*	0.002	0.01** *(0.00)*	0.001
Level change at initial implementation	-0.07 *(0.09)*	0.406	-0.08 *(0.09)*	0.355
Change in monthly trend - initial implementation	0.00 *(0.01)*	0.469	0.00 *(0.01)*	0.439
Level change at full implementation	-0.36* *(0.19)*	0.067	-0.35* *(0.18)*	0.058
Change in monthly trend - full implementation	0.00 *(0.01)*	0.799	0.00 *(0.01)*	0.731
Medicaid Expansion			0.26** *(0.12)*	0.040
COVID-19 Lockdown (Q2 2020)	-0.12* *(0.07)*	0.070	-0.11* *(0.07)*	0.094
COVID-19 Reopening (Q3 2020 - Q1 2021)	0.00 *(0.09)*	0.997	-0.01 *(0.08)*	0.947
Seasonality: Q2	-0.04 *(0.05)*	0.429	-0.04 *(0.05)*	0.341
Seasonality: Q3	0.06 *(0.06)*	0.341	0.05 *(0.06)*	0.392
Seasonality: Q4	-0.02 *(0.05)*	0.627	-0.01 *(0.04)*	0.887

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-4—Percentage of Beneficiaries Who Have a Claim for MAT for SUD (Measure 4)

Measure 4: Percentage of Beneficiaries Who Have a Claim for Medication-Assisted Therapy (MAT) for SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	5.85*** *(0.25)*	<0.001	5.86*** *(0.25)*	<0.001
Baseline monthly trend	0.02 *(0.02)*	0.315	0.02 *(0.02)*	0.321
Level change at initial implementation	0.73** *(0.29)*	0.015	0.74** *(0.29)*	0.015
Change in monthly trend - initial implementation	-0.03* *(0.02)*	0.079	-0.03* *(0.02)*	0.078
Level change at full implementation	0.25 *(0.31)*	0.425	0.24 *(0.31)*	0.430
Change in monthly trend - full implementation	0.02** *(0.01)*	0.031	0.02 *(0.02)*	0.452
Medicaid Expansion			-0.28 *(0.25)*	0.270
COVID-19 Lockdown (Q2 2020)	-0.09 *(0.17)*	0.596	-0.09 *(0.17)*	0.604
COVID-19 Reopening (Q3 2020 - Q1 2021)	0.63*** *(0.17)*	<0.001	0.64*** *(0.17)*	<0.001
Seasonality: Q2	0.33* *(0.16)*	0.050	0.32* *(0.17)*	0.068
Seasonality: Q3	0.01 *(0.17)*	0.957	0.00 *(0.18)*	0.994
Seasonality: Q4	-0.03 *(0.17)*	0.871	-0.05 *(0.17)*	0.774

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-5—Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis (Measure 20)

Measure 20: Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	46.34*** *(1.15)*	<0.001	46.53*** *(1.13)*	<0.001
Baseline monthly trend	-0.14 *(0.09)*	0.115	-0.15* *(0.09)*	0.082
Level change at initial implementation	1.99 *(2.42)*	0.416	2.26 *(2.46)*	0.363
Change in monthly trend - initial implementation	-0.18 *(0.12)*	0.121	-0.19 *(0.12)*	0.105
Level change at full implementation	2.05 *(1.50)*	0.177	1.18 *(1.38)*	0.394
Change in monthly trend - full implementation	-0.34** *(0.15)*	0.029	-0.31 *(0.25)*	0.221
Medicaid Expansion			1.96 *(2.27)*	0.393
COVID-19 Lockdown (Q2 2020)	-1.28 *(1.41)*	0.371	-1.56 *(1.46)*	0.291
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.51 *(1.41)*	0.722	-0.28 *(1.32)*	0.833
Seasonality: Q2	0.31 *(0.96)*	0.744	0.53 *(1.01)*	0.603
Seasonality: Q3	-0.81 *(0.91)*	0.378	-0.76 *(0.91)*	0.412
Seasonality: Q4	0.29 *(0.93)*	0.760	-0.34 *(0.93)*	0.719

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-6—Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit (Measure 21)

Measure 21: Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	7.05*** *(0.57)*	<0.001	7.13*** *(0.47)*	<0.001
Baseline monthly trend	-0.05 *(0.03)*	0.199	-0.05* *(0.03)*	0.093
Level change at initial implementation	-0.06 *(0.83)*	0.942	0.11 *(0.79)*	0.885
Change in monthly trend - initial implementation	0.10 *(0.06)*	0.111	0.09* *(0.05)*	0.099
Level change at full implementation	2.10 *(1.82)*	0.254	1.75 *(1.32)*	0.191
Change in monthly trend - full implementation	-0.24** *(0.12)*	0.047	-0.59** *(0.18)*	0.001
Medicaid Expansion			5.34*** *(1.44)*	<0.001
COVID-19 Lockdown (Q2 2020)	0.00 *(0.74)*	0.999	-0.29 *(0.72)*	0.693
COVID-19 Reopening (Q3 2020 - Q1 2021)	1.19 *(1.10)*	0.283	1.36 *(0.93)*	0.151
Seasonality: Q2	-0.48 *(0.56)*	0.395	-0.21 *(0.50)*	0.681
Seasonality: Q3	-0.96* *(0.52)*	0.071	-0.72 *(0.47)*	0.135
Seasonality: Q4	-0.30 *(0.53)*	0.571	-0.89** *(0.44)*	0.046

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-7—Continuity of Pharmacotherapy for OUD (Measure 22)

Measure 22: Continuity of Pharmacotherapy for OUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	30.75*** *(4.28)*	<0.001	30.43*** *(4.22)*	<0.001
Baseline monthly trend	-0.72** *(0.25)*	0.006	-0.69** *(0.25)*	0.008
Level change at initial implementation	9.68* *(5.26)*	0.073	8.89 *(5.30)*	0.101
Change in monthly trend - initial implementation	0.31 *(0.35)*	0.375	0.34 *(0.35)*	0.346
Level change at full implementation	8.94 *(8.16)*	0.280	13.11 *(8.23)*	0.119
Change in monthly trend - full implementation	2.97** *(1.32)*	0.030	0.36 *(2.23)*	0.874
Medicaid Expansion			3.79 *(7.38)*	0.610
COVID-19 Lockdown (Q2 2020)	-7.02* *(3.89)*	0.078	-6.62* *(3.77)*	0.087
COVID-19 Reopening (Q3 2020 - Q1 2021)	5.43 *(3.83)*	0.164	4.85 *(3.80)*	0.209
Seasonality: Q2	5.32 *(4.12)*	0.204	4.83 *(3.98)*	0.232
Seasonality: Q3	-2.25 *(3.73)*	0.550	-1.50 *(3.79)*	0.694
Seasonality: Q4	3.66 *(4.22)*	0.390	3.43 *(4.24)*	0.424

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-8—Number of ED Visits for SUD (Measure 23)

Measure 23: Number of Emergency Department (ED) Visits for SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	5.59*** *(0.23)*	<0.001	5.59*** *(0.23)*	<0.001
Baseline monthly trend	0.02 *(0.01)*	0.211	0.02 *(0.01)*	0.226
Level change at initial implementation	0.31 *(0.24)*	0.212	0.32 *(0.25)*	0.203
Change in monthly trend - initial implementation	0.02 *(0.01)*	0.155	0.02 *(0.01)*	0.162
Level change at full implementation	-0.78** *(0.35)*	0.029	-0.91** *(0.39)*	0.023
Change in monthly trend - full implementation	-0.14*** *(0.02)*	<0.001	-0.09** *(0.04)*	0.037
Medicaid Expansion			2.30*** *(0.34)*	<0.001
COVID-19 Lockdown (Q2 2020)	-0.35 *(0.29)*	0.243	-0.36 *(0.30)*	0.233
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.61** *(0.21)*	0.006	-0.59** *(0.22)*	0.009
Seasonality: Q2	0.61** *(0.20)*	0.003	0.63** *(0.21)*	0.005
Seasonality: Q3	0.72*** *(0.16)*	<0.001	0.73*** *(0.16)*	<0.001
Seasonality: Q4	-0.10 *(0.11)*	0.349	-0.10 *(0.12)*	0.382

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-9—30-Day Readmission (Measure 24)

Measure 24: 30-Day Readmission	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	25.37*** *(0.86)*	<0.001	25.07*** *(0.70)*	<0.001
Baseline monthly trend	-0.09 *(0.05)*	0.105	-0.10** *(0.05)*	0.034
Level change at initial implementation	0.16 *(1.05)*	0.877	0.54 *(0.93)*	0.568
Change in monthly trend - initial implementation	0.21** *(0.08)*	0.009	0.20** *(0.07)*	0.005
Level change at full implementation	-2.00 *(1.62)*	0.224	-2.25 *(1.40)*	0.114
Change in monthly trend - full implementation	-0.17 *(0.24)*	0.491	-0.39 *(0.26)*	0.139
Medicaid Expansion			0.08 *(1.88)*	0.968
COVID-19 Lockdown (Q2 2020)	3.83*** *(0.90)*	<0.001	3.20*** *(0.69)*	<0.001
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.26 *(1.09)*	0.815	0.10 *(0.84)*	0.906
Seasonality: Q2	-1.61 *(1.16)*	0.171	-0.55 *(0.65)*	0.397
Seasonality: Q3	-0.28 *(0.75)*	0.712	0.28 *(0.58)*	0.629
Seasonality: Q4	0.27 *(0.76)*	0.725	0.33 *(0.69)*	0.633

*p< 0.1, **p < 0.05, ***p<0.001
SE = standard error

Table A-10—Average Number of Inpatient Stays for SUD (Measure 26)

Measure 26: Average Number of Inpatient Stays for SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	3.66*** *(0.14)*	<0.001	3.69*** *(0.14)*	<0.001
Baseline monthly trend	-0.02** *(0.01)*	0.038	-0.02** *(0.01)*	0.043
Level change at initial implementation	0.37** *(0.17)*	0.033	0.35** *(0.17)*	0.042
Change in monthly trend - initial implementation	0.00 *(0.01)*	0.773	0.00 *(0.01)*	0.814
Level change at full implementation	0.05 *(0.28)*	0.862	0.02 *(0.29)*	0.940
Change in monthly trend - full implementation	-0.08*** *(0.02)*	<0.001	-0.08** *(0.03)*	0.010
Medicaid Expansion			0.65** *(0.19)*	0.001
COVID-19 Lockdown (Q2 2020)	-0.17 *(0.12)*	0.164	-0.15 *(0.12)*	0.225
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.06 *(0.14)*	0.667	-0.08 *(0.14)*	0.594
Seasonality: Q2	0.07 *(0.15)*	0.651	0.01 *(0.14)*	0.920
Seasonality: Q3	0.08 *(0.09)*	0.391	0.06 *(0.09)*	0.493
Seasonality: Q4	-0.09 *(0.09)*	0.347	-0.12 *(0.09)*	0.179

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-11—Average Number of Days of Inpatient Hospitalization for SUD (Measure 27)

Measure 27: Average Number of Days of Inpatient Hospitalization for SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	27.51*** *(1.68)*	<0.001	27.47*** *(1.62)*	<0.001
Baseline monthly trend	-0.14 *(0.11)*	0.217	-0.13 *(0.11)*	0.234
Level change at initial implementation	2.37 *(1.45)*	0.107	2.13 *(1.46)*	0.151
Change in monthly trend - initial implementation	-0.09 *(0.12)*	0.462	-0.08 *(0.13)*	0.509
Level change at full implementation	-1.06 *(1.71)*	0.540	-1.08 *(1.66)*	0.517
Change in monthly trend - full implementation	-0.37** *(0.12)*	0.005	-0.14 *(0.24)*	0.570
Medicaid Expansion			0.56 *(1.98)*	0.780
COVID-19 Lockdown (Q2 2020)	-2.31** *(1.07)*	0.035	-2.00* *(1.06)*	0.066
COVID-19 Reopening (Q3 2020 - Q1 2021)	-3.25** *(1.27)*	0.014	-3.46** *(1.34)*	0.013
Seasonality: Q2	-0.51 *(1.12)*	0.653	-0.89 *(1.09)*	0.420
Seasonality: Q3	0.97 *(0.91)*	0.288	0.81 *(0.93)*	0.390
Seasonality: Q4	0.76 *(0.85)*	0.377	1.09 *(0.87)*	0.218

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-12—Average Length of Stay of Inpatient Hospitalization for SUD (Measure 28)

Measure 28: Average Length of Stay of Inpatient Hospitalization for SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	6.77*** (0.37)	<0.001	6.69*** (0.33)	<0.001
Baseline monthly trend	0.01 (0.02)	0.543	0.01 (0.02)	0.480
Level change at initial implementation	-0.31 (0.28)	0.281	-0.33 (0.30)	0.270
Change in monthly trend - initial implementation	-0.02 (0.03)	0.422	-0.02 (0.03)	0.426
Level change at full implementation	-0.44 (0.48)	0.371	-0.40 (0.53)	0.455
Change in monthly trend - full implementation	0.00 (0.04)	0.898	0.08 (0.05)	0.112
Medicaid Expansion			-1.02* (0.53)	0.062
COVID-19 Lockdown (Q2 2020)	-0.27 (0.20)	0.185	-0.25 (0.21)	0.235
COVID-19 Reopening (Q3 2020 - Q1 2021)	-1.00** (0.30)	0.002	-1.02** (0.33)	0.003
Seasonality: Q2	-0.48** (0.17)	0.006	-0.43** (0.17)	0.018
Seasonality: Q3	0.15 (0.22)	0.517	0.17 (0.21)	0.415
Seasonality: Q4	0.28 (0.22)	0.211	0.49** (0.20)	0.017

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-13—Average Number of Inpatient Stays for Any Cause (Measure 29)

Measure 29: Average Number of Inpatient Stays for Any Cause	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	77.34*** *(2.44)*	<0.001	77.39*** *(2.49)*	<0.001
Baseline monthly trend	-0.44** *(0.14)*	0.002	-0.45** *(0.14)*	0.002
Level change at initial implementation	8.45** *(2.65)*	0.002	8.56** *(2.57)*	0.002
Change in monthly trend - initial implementation	-0.41** *(0.12)*	0.002	-0.41** *(0.13)*	0.003
Level change at full implementation	-2.28 *(3.08)*	0.462	-2.40 *(3.23)*	0.461
Change in monthly trend - full implementation	-0.08 *(0.25)*	0.757	-0.59 *(0.41)*	0.158
Medicaid Expansion			1.65 *(2.77)*	0.554
COVID-19 Lockdown (Q2 2020)	-0.91 *(2.51)*	0.720	-1.17 *(2.54)*	0.648
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.33 *(1.76)*	0.850	-0.21 *(1.83)*	0.909
Seasonality: Q2	0.22 *(1.36)*	0.873	0.47 *(1.38)*	0.735
Seasonality: Q3	1.96 *(1.66)*	0.244	2.26 *(1.62)*	0.169
Seasonality: Q4	0.24 *(1.52)*	0.876	-0.34 *(1.54)*	0.827

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-14—Average Number of Days of Inpatient for Any Cause (Measure 30)

Measure 30: Average Number of Days of Inpatient for Any Cause	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	624.25*** *(20.72)*	<0.001	623.43*** *(20.49)*	<0.001
Baseline monthly trend	-3.31** *(1.15)*	0.006	-3.32** *(1.14)*	0.005
Level change at initial implementation	24.76 *(19.36)*	0.207	25.06 *(19.20)*	0.198
Change in monthly trend - initial implementation	-2.92** *(1.41)*	0.043	-2.93** *(1.40)*	0.042
Level change at full implementation	31.68 *(30.99)*	0.312	23.31 *(28.12)*	0.411
Change in monthly trend - full implementation	-7.92** *(3.36)*	0.022	-4.43 *(4.63)*	0.343
Medicaid Expansion			-62.41 *(41.50)*	0.139
COVID-19 Lockdown (Q2 2020)	-10.92 *(18.41)*	0.556	-11.44 *(18.49)*	0.539
COVID-19 Reopening (Q3 2020 - Q1 2021)	-26.10 *(21.43)*	0.229	-25.81 *(21.42)*	0.234
Seasonality: Q2	-12.13 *(10.48)*	0.253	-10.69 *(9.88)*	0.285
Seasonality: Q3	-16.98 *(15.57)*	0.281	-16.51 *(15.42)*	0.290
Seasonality: Q4	-5.18 *(11.84)*	0.664	-3.40 *(12.26)*	0.783

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-15—Average Length of Stay of Inpatient Hospitalization for Any Cause (Measure 31)

Measure 31: Average Length of Stay of Inpatient Stays for Any Cause	Non-Expansion		Total	
Variable	**Estimate (SE)**	**p-value**	**Estimate (SE)**	**p-value**
Intercept	5.71*** *(0.18)*	<0.001	5.70*** *(0.17)*	<0.001
Baseline monthly trend	0.03** *(0.01)*	0.037	0.03** *(0.01)*	0.018
Level change at initial implementation	-0.51* *(0.26)*	0.058	-0.54** *(0.26)*	0.043
Change in monthly trend - initial implementation	-0.03* *(0.02)*	0.081	-0.03* *(0.02)*	0.088
Level change at full implementation	0.75* *(0.44)*	0.097	0.73 *(0.49)*	0.142
Change in monthly trend - full implementation	-0.08* *(0.04)*	0.055	0.01 *(0.05)*	0.873
Medicaid Expansion			-1.04** *(0.50)*	0.044
COVID-19 Lockdown (Q2 2020)	0.32 *(0.33)*	0.337	0.37 *(0.34)*	0.281
COVID-19 Reopening (Q3 2020 - Q1 2021)	-0.39* *(0.23)*	0.097	-0.41* *(0.24)*	0.097
Seasonality: Q2	-0.42** *(0.16)*	0.012	-0.46** *(0.17)*	0.010
Seasonality: Q3	-0.31* *(0.17)*	0.078	-0.35** *(0.15)*	0.021
Seasonality: Q4	-0.07 *(0.16)*	0.664	0.04 *(0.15)*	0.809

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-16—Average Number of ED Visits for Any Cause (Measure 32)

Measure 32: Number of ED Visits for Any Cause	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	234.01*** *(4.01)*	<0.001	234.17*** *(3.88)*	<0.001
Baseline monthly trend	0.19 *(0.27)*	0.478	0.20 *(0.27)*	0.460
Level change at initial implementation	20.89** *(6.75)*	0.003	20.73** *(6.86)*	0.004
Change in monthly trend - initial implementation	-1.75*** *(0.39)*	<0.001	-1.75*** *(0.39)*	<0.001
Level change at full implementation	-9.72* *(5.64)*	0.091	-9.96* *(5.70)*	0.087
Change in monthly trend - full implementation	2.20*** *(0.62)*	<0.001	1.55* *(0.81)*	0.062
Medicaid Expansion			-14.44** *(6.28)*	0.026
COVID-19 Lockdown (Q2 2020)	-25.98** *(12.64)*	0.045	-25.92** *(12.59)*	0.045
COVID-19 Reopening (Q3 2020 - Q1 2021)	-22.78*** *(4.18)*	<0.001	-22.90*** *(4.23)*	<0.001
Seasonality: Q2	11.24*** *(2.89)*	<0.001	10.93*** *(2.81)*	<0.001
Seasonality: Q3	27.83*** *(3.12)*	<0.001	28.04*** *(3.08)*	<0.001
Seasonality: Q4	3.79 *(2.93)*	0.201	2.96 *(3.04)*	0.335

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-17 through Table A-27 contain additional ITS analyses on cost measures (Measures 33 and 34).

Table A-17—Non-SUD Costs Among Beneficiaries With an SUD (Measure 33)

Measure 33: Non-SUD Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	7.292*** *(0.039)*	<0.001	7.290*** (0.039)	<0.001
Baseline monthly trend	0.002 (0.002)	0.484	0.002 (0.002)	0.471
Level change at initial implementation	0.134** *(0.054)*	0.012	0.132** *(0.054)*	0.015
Change in monthly trend - initial implementation	-0.018*** *(0.004)*	<0.001	-0.018*** *(0.004)*	<0.001
Level change at full implementation	0.131 *(0.086)*	0.124	0.135 *(0.087)*	0.121
Change in monthly trend - full implementation	0.001 *(0.007)*	0.935	-0.001 *(0.014)*	0.962
Medicaid Expansion			-0.162 *(0.114)*	0.154
Quarter 2	*0.080*** *(0.033)*	0.014	*0.079*** *(0.034)*	0.021
Quarter 3	*-0.031* *(0.033)*	0.346	*-0.030* *(0.034)*	0.371
Quarter 4	*-0.041* *(0.031)*	0.180	*-0.039* *(0.032)*	0.223
COVID 2020 Q2	*-0.120*** *(0.058)*	0.039	*-0.118*** *(0.059)*	0.043
COVID 2020 Q3 - 2021 Q1	*0.084* *(0.053)*	0.114	*0.082* *(0.053)*	0.123

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-18—SUD IMD Costs Among Beneficiaries With an SUD (Measure 33)

Measure 33: SUD Institutions for Mental Disease (IMD) Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	3.059*** *(0.073)*	<0.001	3.044*** (0.077)	<0.001
Baseline monthly trend	0.009** (0.004)	0.035	0.008* (0.005)	0.089
Level change at initial implementation	-0.174* *(0.093)*	0.062	-0.140 *(0.103)*	0.173
Change in monthly trend - initial implementation	0.005 *(0.007)*	0.47131006	0.003 *(0.007)*	0.656
Level change at full implementation	-0.258* *(0.135)**	0.057	-0.170 *(0.140)*	0.225
Change in monthly trend - full implementation	0.004 *(0.010)*	0.691	-0.029** *(0.014)*	0.036
Medicaid Expansion			0.856*** *(0.124)*	<0.001
Quarter 2	*-0.015* *(0.059)*	0.799	*0.070* *(0.056)*	0.214
Quarter 3	*0.250**** *(0.056)*	<0.001	*0.280**** *(0.061)*	<0.001
Quarter 4	*0.071* *(0.053)*	0.181	*0.066* *(0.052)*	0.212
COVID 2020 Q2	*-0.102* *(0.106)*	0.335	*-0.151* *(0.116)*	0.192
COVID 2020 Q3 - 2021 Q1	*-0.227*** *(0.084)*	0.007	*-0.186*** *(0.090)*	0.040

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-19—SUD Non-IMD Costs Among Beneficiaries With an SUD (Measure 33)

Measure 33: SUD Non-IMD Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	6.165*** *(0.050)*	<0.001	6.167*** (0.048)	<0.001
Baseline monthly trend	-0.007** (0.003)	0.031	-0.007** (0.003)	0.027
Level change at initial implementation	0.168** *(0.073)*	0.021	0.163** *(0.070)*	0.019
Change in monthly trend - initial implementation	0.003 *(0.005)*	0.62569204	0.003 *(0.005)*	0.586
Level change at full implementation	-0.131 *(0.120)*	0.275	-0.139 *(0.114)*	0.223
Change in monthly trend - full implementation	-0.010 *(0.011)*	0.339	-0.012 *(0.016)*	0.446
Medicaid Expansion			0.185 *(0.123)*	0.132
Quarter 2	*-0.047* *(0.047)*	0.315	*-0.058* *(0.045)*	0.195
Quarter 3	*0.009* *(0.043)*	0.829	*0.007* *(0.041)*	0.860
Quarter 4	*-0.034* *(0.041)*	0.398	*-0.040* *(0.038)*	0.304
COVID 2020 Q2	*-0.034* *(0.076)*	0.659	*-0.028* *(0.073)*	0.703
COVID 2020 Q3 - 2021 Q1	*-0.056* *(0.068)*	0.414	*-0.060* *(0.065)*	0.357

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-20—ED Outpatient Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: ED Outpatient Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	4.638*** *(0.037)*	<0.001	4.645*** (0.036)	<0.001
Baseline monthly trend	0.005** (0.002)	0.017	0.005** (0.002)	0.017
Level change at initial implementation	0.104** *(0.047)*	0.027	0.105** *(0.047)*	0.024
Change in monthly trend - initial implementation	-0.014*** *(0.004)*	<0.001	-0.014*** *(0.004)*	<0.001
Level change at full implementation	-0.051 *(0.076)*	0.503	-0.055 *(0.075)*	0.464
Change in monthly trend - full implementation	0.009 *(0.006)*	0.163	0.009 *(0.010)*	0.384
Medicaid Expansion			0.027 *(0.082)*	0.738
Quarter 2	*0.076*** *(0.031)*	0.013	*0.071*** *(0.031)*	0.021
Quarter 3	*0.169**** *(0.030)*	<0.001	*0.164**** *(0.030)*	<0.001
Quarter 4	*0.064*** *(0.028)*	0.023	*0.053** *(0.028)*	0.060
COVID 2020 Q2	*-0.283**** *(0.058)*	<0.001	*-0.282**** *(0.058)*	<0.001
COVID 2020 Q3 - 2021 Q1	*-0.109*** *(0.046)*	0.018	*-0.108*** *(0.046)*	0.018

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-21—Inpatient Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Inpatient Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	6.589*** *(0.080)*	<0.001	6.587*** (0.080)	<0.001
Baseline monthly trend	-0.021*** (0.005)	<0.001	-0.021*** (0.005)	<0.001
Level change at initial implementation	0.405** *(0.128)*	0.002	0.399** *(0.129)*	0.002
Change in monthly trend - initial implementation	-0.009 *(0.010)*	0.33807655	-0.009 *(0.010)*	0.348
Level change at full implementation	0.301 *(0.207)*	0.147	0.318 *(0.208)*	0.127
Change in monthly trend - full implementation	-0.014 *(0.019)*	0.486	-0.039 *(0.034)*	0.247
Medicaid Expansion			0.286 *(0.281)*	0.309
Quarter 2	*0.212*** *(0.077)*	0.006	*0.209*** *(0.078)*	0.007
Quarter 3	*-0.094* *(0.076)*	0.220	*-0.089* *(0.077)*	0.247
Quarter 4	*-0.060* *(0.072)*	0.400	*-0.063* *(0.072)*	0.381
COVID 2020 Q2	*-0.148* *(0.134)*	0.268	*-0.146* *(0.135)*	0.279
COVID 2020 Q3 - 2021 Q1	*0.225** *(0.130)*	0.084	*0.221** *(0.131)*	0.091

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-22—Long-Term Care Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Long-Term Care Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	5.067*** *(0.240)*	<0.001	5.068*** (0.240)	<0.001
Baseline monthly trend	0.013 (0.014)	0.345	0.013 (0.014)	0.347
Level change at initial implementation	-0.228 *(0.378)*	0.546	-0.226 *(0.378)*	0.550
Change in monthly trend - initial implementation	-0.049 *(0.044)*	0.26578881	-0.049 *(0.044)*	0.266
Level change at full implementation	-0.020 *(1.294)*	0.988	-0.084 *(1.452)*	0.954
Change in monthly trend - full implementation	-0.111 *(0.221)*	0.616	-0.072 *(0.438)*	0.869
Medicaid Expansion			-0.401 *(3.133)*	0.898
Quarter 2	*-0.208* *(0.231)*	0.368	*-0.208* *(0.231)*	0.367
Quarter 3	*0.005* *(0.216)*	0.981	*0.003* *(0.216)*	0.988
Quarter 4	*-0.239* *(0.227)*	0.293	*-0.239* *(0.227)*	0.294
COVID 2020 Q2	*-0.188* *(0.638)*	0.768	*-0.188* *(0.639)*	0.769
COVID 2020 Q3 - 2021 Q1	*-0.080* *(0.603)*	0.894	*-0.078* *(0.605)*	0.897

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-23—Total Outpatient Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Total Outpatient Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	5.552*** *(0.039)*	<0.001	5.555*** (0.039)	<0.001
Baseline monthly trend	0.005* (0.003)	0.055	0.005* (0.003)	0.061
Level change at initial implementation	0.156** *(0.051)*	0.002	0.160** *(0.051)*	0.002
Change in monthly trend - initial implementation	-0.012** *(0.004)*	0.00108883	-0.013*** *(0.004)*	<0.001
Level change at full implementation	0.010 *(0.078)*	0.898	-0.017 *(0.079)*	0.833
Change in monthly trend - full implementation	-0.006 *(0.007)*	0.389	0.006 *(0.011)*	0.614
Medicaid Expansion			-0.052 *(0.089)*	0.556
Quarter 2	*0.016* *(0.032)*	0.624	*0.018* *(0.033)*	0.590
Quarter 3	*0.056** *(0.031)*	0.067	*0.054** *(0.031)*	0.086
Quarter 4	*-0.004* *(0.029)*	0.902	*-0.007* *(0.029)*	0.817
COVID 2020 Q2	*-0.081* *(0.053)*	0.127	*-0.083* *(0.053)*	0.117
COVID 2020 Q3 - 2021 Q1	*-0.015* *(0.047)*	0.747	*-0.012* *(0.047)*	0.793

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-24—Pharmacy Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Pharmacy Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	5.457*** *(0.043)*	<0.001	5.459*** (0.040)	<0.001
Baseline monthly trend	0.018*** (0.003)	<0.001	0.018*** (0.002)	<0.001
Level change at initial implementation	0.120** *(0.050)*	0.017	0.110** *(0.046)*	0.017
Change in monthly trend - initial implementation	-0.025*** *(0.004)*	<0.001	-0.025*** *(0.003)*	<0.001
Level change at full implementation	-0.042 *(0.075)*	0.575	-0.027 *(0.070)*	0.701
Change in monthly trend - full implementation	0.011* *(0.006)*	0.080	0.025** *(0.010)*	0.015
Medicaid Expansion			-0.328*** *(0.082)*	<0.001
Quarter 2	*0.026* *(0.030)*	0.385	*0.002* *(0.030)*	0.941
Quarter 3	*-0.045* *(0.031)*	0.153	*-0.063*** *(0.030)*	0.035
Quarter 4	*0.004* *(0.027)*	0.894	*0.015* *(0.026)*	0.556
COVID 2020 Q2	*-0.074* *(0.049)*	0.128	*-0.058* *(0.045)*	0.204
COVID 2020 Q3 - 2021 Q1	*-0.015* *(0.045)*	0.729	*-0.024* *(0.041)*	0.557

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-25—Professional Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Professional Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	**Estimate (SE)**	***p*-value**	**Estimate (SE)**	***p*-value**
Intercept	6.401*** *(0.021)*	<0.001	6.402*** (0.021)	<0.001
Baseline monthly trend	0.005*** (0.001)	<0.001	0.005*** (0.001)	<0.001
Level change at initial implementation	0.026 *(0.029)*	0.362	0.026 *(0.029)*	0.380
Change in monthly trend - initial implementation	-0.009*** *(0.002)*	<0.001	-0.009*** *(0.002)*	<0.001
Level change at full implementation	0.027 *(0.044)*	0.537	0.035 *(0.044)*	0.431
Change in monthly trend - full implementation	0.005 *(0.004)*	0.182	0.001 *(0.007)*	0.838
Medicaid Expansion			-0.124** *(0.052)*	0.017
Quarter 2	*0.027* *(0.017)*	0.121	*0.024* *(0.018)*	0.185
Quarter 3	*0.007* *(0.017)*	0.704	*0.006* *(0.018)*	0.751
Quarter 4	*-0.012* *(0.016)*	0.438	*-0.015* *(0.017)*	0.376
COVID 2020 Q2	*-0.086*** *(0.031)*	0.005	*-0.084*** *(0.031)*	0.007
COVID 2020 Q3 - 2021 Q1	*0.030* *(0.027)*	0.266	*0.029* *(0.027)*	0.281

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-26—Non-ED Outpatient Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Non-ED Outpatient Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	5.033*** *(0.064)*	<0.001	5.033*** (0.063)	<0.001
Baseline monthly trend	0.005 (0.004)	0.266	0.004 (0.004)	0.284
Level change at initial implementation	0.200** *(0.082)*	0.015	0.205** *(0.082)*	0.012
Change in monthly trend - initial implementation	-0.012* *(0.006)*	0.05321205	-0.012** *(0.006)*	0.048
Level change at full implementation	0.053 *(0.123)*	0.663	0.013 *(0.123)*	0.917
Change in monthly trend - full implementation	-0.015 *(0.011)*	0.154	0.004 *(0.018)*	0.828
Medicaid Expansion			-0.108 *(0.143)*	0.449
Quarter 2	*-0.024 (0.052)*	0.646	*-0.017 (0.052)*	0.745
Quarter 3	*-0.018 (0.049)*	0.705	*-0.021 (0.050)*	0.678
Quarter 4	*-0.047 (0.045)*	0.296	*-0.046 (0.046)*	0.316
COVID 2020 Q2	*0.035 (0.078)*	0.655	*0.030 (0.078)*	0.699
COVID 2020 Q3 - 2021 Q1	*0.040 (0.074)*	0.583	*0.045 (0.073)*	0.537

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

Table A-27—Total Costs Among Beneficiaries With an SUD (Measure 34)

Measure 34: Total Costs Among Beneficiaries With an SUD	Non-Expansion		Total	
Variable	Estimate (SE)	*p*-value	Estimate (SE)	*p*-value
Intercept	7.580*** *(0.032)*	<0.001	7.580*** (0.032)	<0.001
Baseline monthly trend	0.000 (0.002)	0.995	0.000 (0.002)	0.950
Level change at initial implementation	0.136** *(0.045)*	0.002	0.132** *(0.045)*	0.003
Change in monthly trend - initial implementation	-0.013*** *(0.003)*	<0.001	-0.013*** *(0.003)*	<0.001
Level change at full implementation	0.072 *(0.071)*	0.310	0.078 *(0.072)*	0.279
Change in monthly trend - full implementation	-0.002 *(0.006)*	0.770	-0.005 *(0.011)*	0.636
Medicaid Expansion			-0.049 *(0.089)*	0.578
Quarter 2	*0.054*** *(0.028)*	0.049	*0.049** *(0.028)*	0.082
Quarter 3	*-0.018* *(0.027)*	0.504	*-0.018* *(0.028)*	0.510
Quarter 4	*-0.038* *(0.025)*	0.133	*-0.038* *(0.026)*	0.141
COVID 2020 Q2	*-0.103*** *(0.048)*	0.031	*-0.100*** *(0.048)*	0.038
COVID 2020 Q3 - 2021 Q1	*0.050* *(0.043)*	0.251	*0.047* *(0.044)*	0.279

*p< 0.1, **p < 0.05, ***p<0.001
SE=standard error

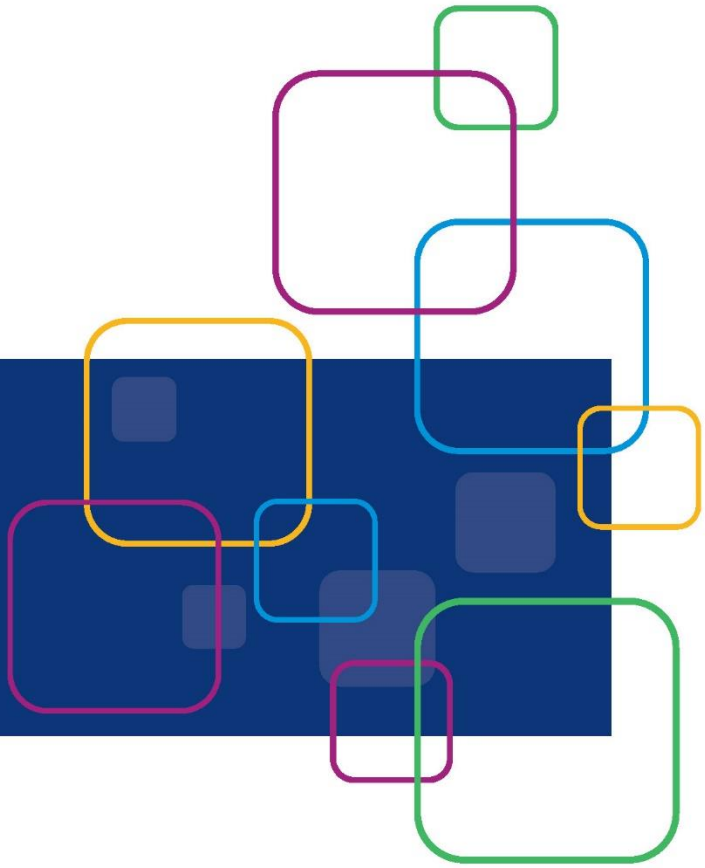
Appendix B. Evaluation Design

Appendix B contains the Centers for Medicare & Medicaid Services (CMS)-approved evaluation design for the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver).

PUBLIC CONSULTING GROUP

Solutions that Matter

Evaluation Design: Nebraska Medicaid SUD Demonstration Program



July 21, 2020

Public Consulting Group
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A. GENERAL BACKGROUND INFORMATION

1. Demonstration Name and Time Period

The Nebraska Substance Use Disorder demonstration is a new 1115 waiver, approved for July 1, 2019 through June 30, 2024.

2. Demonstration Goals

The purpose of this SUD-focused demonstration program is to enable the State to provide a full continuum of care for people struggling with addiction. While Nebraska has not experienced the type of public health crisis afflicting other states as a result of prescription and illicit opioid abuse, the state is still feeling the impact of the national epidemic. Drug overdoses were responsible for 128 deaths in Nebraska in 2016, and of those, 35% involved an opioid.[1] Nebraskans, including those participating in the Medicaid program, continue to struggle with a variety of substance use challenges including opioids. The drug of choice identified by individuals admitted to Substance Abuse Treatment Centers (SATC) in 2016 include alcohol, meth, marijuana, opiates, and cocaine. The State believes the demonstration program approved by CMS will allow the state to build on the recent delivery system reforms and DHHS-wide SUD initiatives.

During the demonstration period, the state seeks to achieve the following goals:

1. Increased rates of identification, initiation, and engagement in treatment for SUD;
2. Increased adherence to and retention in treatment;
3. Reductions in overdose deaths, particularly those due to opioids;
4. Reduced utilization of emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services;
5. Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate; and,
6. Improved access to care for physical health conditions among beneficiaries with SUD.

The State seeks to achieve these goals by improving access to evidence-based SUD treatment, and by improving the quality of available SUD treatment. In particular, the demonstration aims to increase access to IMD[2] stays, Medically Managed/Monitored Withdrawal services, and Medication Assisted Treatment for beneficiaries with OUD.

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[1] DHHS Drug Overdose Facts Sheet for 2016. Pg. 1. Available at: http://dhhs.ne.gov/DOP%20document%20library/Special%20Emphasis%20Report%20Prescription%20Drug%20Overdose%202016.pdf

[2] Institution for Mental Diseases (IMD): The term "institution for mental diseases" means a hospital, nursing facility, or other institution of more than 16 beds, that is primarily engaged in providing diagnosis, treatment, or care of persons with mental diseases, including medical attention, nursing care, and related services.

3. Description of the Demonstration

Nebraska Medicaid[3] currently offers a range of outpatient and inpatient SUD services, which will be enhanced by the new services added by the demonstration (Table 1). Coverage of IMD stays >15 days had been available previously under "in lieu of service" authority but was authorized under the waiver authority beginning at the launch of the demonstration. The 1115 waiver and State Plan authority were received simultaneously, allowing MLTC to communicate the change to providers and begin waiver-authorized reimbursement immediately. The new service categories offered as part of the SUD waiver demonstration are medically managed/monitored withdrawal management (MMW), and Medication-assisted Treatment/opioid treatment Programs (MAT/OTP). DHHS has applied for State Plan authority for MMW and MAT/OTP, and anticipates receiving approval in July 2020. While the approval is expected to retroactively authorize billing as of Jan 1,2020, reimbursement will be rolled out in the fourth quarter of 2020, due to the preparation required for implementation. Nebraska has low rates of OUD compared to most states, and therefore has not previously developed the infrastructure for comprehensive OUD treatment. Prior to the demonstration, neither MMW or MAT/OTP was widely available in the state, and the few providers offering services did not participate in Medicaid. In order to successfully increase access, DHHS needed to design requirements and rate structures that would be viable for providers, and to support providers in developing capacity for new services. During the first year of the demonstration, MLTC researched other states' policies, and engaged stakeholders including MCOs and current and prospective service providers. Preparations for rollout included development of:

- Service definitions
- Billing guidelines and fees
- IT updates to the billing system
- Updated regulations
- Provider enrollment and certification requirements
- Provider training materials

DHHS anticipates being ready to offer MMW and MAT/OTP services beginning Oct 1, 2020.

[3] The Division of Medicaid and Long-term Care (MLTC) is the agency responsible for the administration of the Medicaid program in Nebraska. MLTC is one of five divisions that make up the Nebraska Department of Health and Humans Services (DHHS).

Table 1. Existing and New Nebraska Medicaid SUD Services by ASAM Level of Care.

ASAM Level of Care	ASAM Service Title	ASAM Brief Definition	Service Start Date	Medicaid Service Authority[4]
1.0	Outpatient Services	Less than nine hours of service/week (adults); less than six hours/week (adolescents) for recovery or motivational enhancement therapies/strategies.	Existing Medicaid Service	1915(b)
2.1	Intensive Outpatient Services	Nine or more hours of service/week (adults); six or more hours/week (adolescents) to treat multidimensional instability.	Existing Medicaid Service	1915(b)
2.5	Partial Hospitalization Services	20 or more hours of service/week for multidimensional instability not requiring 24-hour care	Existing Medicaid Service	1915(b)
3.1	Clinically Managed Low-Intensity Residential Services	24-hour structure with available trained personnel; at least five hours of clinical service/week and prepare for outpatient treatment.	Existing Medicaid Service (Stays >15 days covered under demonstration as of 7/9/2019)	1915(b) and 1115(a)
3.2-WM	Clinically Managed Residential Withdrawal Management	Moderate withdrawal, but needs 24-hour support to complete withdrawal management and increase likelihood of continuing treatment or recovery.	Existing Medicaid Service	1915(b)
3.3	Clinically Managed Population- Specific High- Intensity Residential Services	24-hour care with trained counselors to stabilize multidimensional imminent danger. Less intense milieu and group treatment for those with cognitive or other impairments unable to use full active milieu or therapeutic community and prepare for outpatient treatment.	Existing Medicaid Service (Stays >15 days covered under demonstration as of 7/9/2019)	1915(b) and 1115(a)
3.5	Clinically Managed High-Intensity Residential Services	24-hour care with trained counselors to stabilize multidimensional imminent danger and prepare for outpatient treatment. Able to tolerate and use full milieu or therapeutic community.	Existing Medicaid Service (Stays >15 days covered under demonstration as of 7/9/2019)	1915(b) and 1115(a)
3.7-WM (New)	Medically Monitored Inpatient Withdrawal Management	Severe withdrawal, 24-hour nursing care and physician visits; unlikely to complete withdrawal management without medical monitoring. **	New Service Anticipated 10/1/2020	State Plan (submitted to CMS on March 31, 2020)
Opioid Treatment Program (OTP)	Must meet ASAM criteria for care placement	Community based outpatient addiction treatment for individuals diagnosed with a severe opioid use disorder, as defined in the Diagnostic Statistical Manual (DSM), and meeting American Society of Addiction Medicine (ASAM) criteria for care placement,	New Service Anticipated 10/1/2020	State Plan (submitted to CMS on March 31, 2020)

[4] Services that are impacted by the expenditure authority allowed under this demonstration waiver include a reference to 1115(a) authority in the Medicaid Service Authority column.

		as determined by a practitioner. Opioid treatment programs administer medications approved by the Food and Drug Administration (FDA) to treat opiate addiction and the alleviation of the adverse medical, psychological, or physical effects incident to opioid addiction. Medications are provided in conjunction with rehabilitative and medical services, in accordance with 42 CFR § 8.12. Length of service is based on an individual's medical need, to achieve stabilization and prevent relapse.		
Other	Peer Support	Peer support services are provided by individuals who have lived experience with Mental Health or Substance Use Disorders (SUD). The core element of this service is the development of a relationship based on shared lived experience and mutuality between the provider and individual.	Existing Medicaid Service	State Plan

* Descriptions taken from ASAM Resource Guide

** Includes addition of methadone

4. Description of the population

Currently the Nebraska Medicaid Program provides health coverage to approximately 240,000 residents. In any given month, 10 to 12 percent of the state's population is eligible for Medicaid. DHHS anticipates an increase in the adult beneficiary population beginning Oct 1, 2020 due to Medicaid Expansion. Over 98 percent of Medicaid enrollees are served through the state's managed care delivery system.

While Medicaid beneficiaries receiving long-term services and supports (LTSS) receive their physical health, behavioral health, and pharmacy services through their managed care plan, their LTSS benefits continue to be delivered through the legacy FFS system.

The target population for the demonstration is all Medicaid beneficiaries aged 19-64.

5. Nebraska context

State OUD context

In Nebraska, the prevalence of opioid-related death and hospitalization is lower than national rates but has increased rapidly in recent years. Emergency department visits related to opioid overdoses were 80.8 per 100,000 people in 2017, up from 33.3 per 100,000 in 2007.[4] Inpatient stays similarly grew from 61.4 to 168.5 per 100,000 over the same time period.[5] Nebraska's drug overdose death rate also increased to 8.1 per 100,000 people in 2017, up from 3.6 per 100,000 in 2004.[6] In addition, Nebraska is also experiencing an increase in newborns exhibiting drug withdrawal symptoms. Recent data from the National Institute on Drug Abuse indicates that rates of NAS in Nebraska have not only increased, but more than doubled in a span of only four years, from less than 1 case per 1,000 hospital births in 2010 to 2.1 cases per 1,000 hospital births in 2016.[7]

While Nebraska's rates of SUD are lower than the US average, the frequency of needing but not receiving SUD treatment is similar to the national rate, indicating that Nebraska residents with SUD are underserved.[8] This gap can be attributed in part to a lack of available services. Results from the National Survey of Substance Abuse Treatment Services (N-SSATS) indicated that compared to the US average, Nebraska has fewer facilities providing services for detoxification and for MAT/OTP relative to the size of the adult population[9] (Table 2).

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[5] HCUP Fast Stats. Healthcare Cost and Utilization Project (HCUP). December 2019. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/faststats/opioid/opioiduse

[6] National Institute on Drug Abuse, Nebraska Opioid Summary, May 2019. Retrieved from: https://www.drugabuse.gov/opioid-summaries-by-state/nebraska-opioid-summary

[7] HCUP Fast Stats. Healthcare Cost and Utilization Project (HCUP). December 2019. Agency for Healthcare Research and Quality, Rockville, MD. Retrieved from: www.hcup-us.ahrq.gov/faststats/nas/nasquery

[8] Substance Abuse and Mental Health Services Administration. (2019). Results from the 2018 National Survey on Drug Use and Health: Detailed tables. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data/

[9] Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, National Survey of Substance Abuse Treatment Services (N–SSATS), 2008–2018.

Table 2 Number of facilities in Nebraska and nationally offering substance use disorder treatment.

	Nebraska		US	
	Number of facilities	**Per 10,000 Adult Residents***	**Number of facilities**	**Per 10,000 Adult Residents***
Total facilities responding to survey	124	0.8502	14,809	0.5803
Facilities offering:				
All detoxification	14	0.0960	3336	0.1307
Outpatient facilities offering detoxification	3	0.0206**	1505	0.0590
Residential non-hospital facilities offering detoxification	8	0.0549	1140	0.0447
Hospital inpatient facilities offering detoxification	3	0.0206	721	0.0283
Opioid specific detoxification	1	0.0069**	861	0.0337
All facilities offering Opioid Treatment Programs (OTPs)	3	0.0206**	1,519	0.0595
Outpatient facilities offering OTPs	3	0.0206**	1411	0.0553
Residential (non-hospital) facilities offering OTPs	0	0**	132	0.0052
Hospital inpatient facilities offering OTPs	0	0**	121	0.0047
Medication-assisted opioid therapy provided at facilities with OTPs	3	0.0206**	1519	0.0595
Any type of medication assisted therapy (MAT)	22	0.1509**	6,259	0.2453
Buprenorphine (includes buprenorphine with and without naloxone, buprenorphine sub-dermal implant, and extended-release injectable buprenorphine)	16	0.1097**	4951	0.1940

Source: Substance Abuse and Mental Health Services Administration, National Survey of Substance Abuse Treatment Services (N-SSATS): 2018. Data on Substance Abuse Treatment Facilities. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2019. Retrieved from: https://www.samhsa.gov/data/data-we-collect/nssats-national-survey-substance-abuse-treatmentservices.

* Number of facilities divided by the number of adult residents in Nebraska (1,458,334) and the US (255,200,373) as reported by U.S. Census Bureau, Population Division, Estimates of the Total Resident Population and Resident Population Age 18 Years and Older for the United States, States, and Puerto Rico: July 1, 2019

History of IMD coverage

A critical element in realizing CMS's goals for this demonstration is the ability for Nebraska Medicaid to allow Medicaid-enrolled individuals requiring inpatient SUD treatment to be allowed to complete their medically appropriate length of stay in facilities that meet the regulatory definition of an Institution for Mental Diseases (IMD) as defined in Section 1905(i) of the Social Security Act.[10]

On July 5, 2016, CMS implemented the Medicaid and CHIP Managed Care Final Rule (Final Rule). 42 CFR 438.6(e) as established by the Final Rule stipulates that a state may make a capitation payment to a managed care organization (MCO) for a Medicaid enrollee age 21-64 receiving inpatient treatment in an IMD for a "short term" stay of no longer than 15 days during the period of the monthly capitation payment.

Prior to the implementation of this provision, Nebraska was among several Medicaid managed care states that included IMD stays (regardless of the length of stay) in rate development for capitation payments utilizing CMS's well established "in lieu of service" authority which allowed states to offer services not covered by the State Plan provided those services met certain criteria including medical appropriateness and cost effectiveness.

Implementing the limitations of the Final Rule had the potential to severely disrupt the treatment plans of some of Nebraska Medicaid's most medically and emotionally fragile adults. The Final Rule limitations incentivize Medicaid health plans and providers to seek treatment for individuals with an SUD in less appropriate and potentially costlier settings as those health plans and providers would anticipate that reimbursement for Medicaid services in IMDs will end after 15 days. In Nebraska, this scenario would almost certainly result in increased utilization of emergency departments as the state's rural profile has historically limited the availability of inpatient behavioral health facilities.

DHHS requested expenditure authority to continue to permit Medicaid MCOs to provide enrolled beneficiaries the appropriate combination of services, in the most appropriate and cost-effective setting, and for the medically appropriate duration without regard to:

1) The 15-day length of stay limit imposed by 42 CFR 438.6(e); and
2) The requirement imposed by 42 CFR 438.6(e) that for purposes of capitation rate setting, that utilization of the substitute services identified in that that section be priced by the state and its contracted actuary at the cost of the same services delivered in state plan settings.

With the waiver approval on Jul 9, 2019, DHHS was granted expenditure authority under Section 1115 to claim as medical assistance the costs of services provided to eligible individuals ages 21-64 residing in facilities meeting the regulatory definition of an IMD.

Upcoming Medicaid Expansion

The demonstration also builds on the state's broad efforts to reform and update the Medicaid program. On January 1, 2017, Nebraska Medicaid launched Heritage Health, a new managed care program that integrates physical health, behavioral health, and pharmacy services into a single, statewide,

[10] Section 1905(i) of the Social Security Act. Available at: https://www.ssa.gov/OP_Home/ssact/title19/1905.htm

comprehensive delivery system. The objectives of Heritage Health include:

- Improved health outcomes;
- Enhanced integration of services and quality of care;
- Emphasis on person-centered care, including enhanced preventive and care management services;
- Reduced rates of costly and avoidable care; and
- Improved financially sustainable system.

Nebraska Medicaid contracts with three health plans for the administration of the Heritage Health program: Nebraska Total Care (Centene), UnitedHealthCare Community Plan, and WellCare of Nebraska.

A driving force behind the creation of Heritage Health was the desire to improve care coordination and simplify service delivery for Medicaid beneficiaries. Prior to the launch of Heritage Health, a beneficiary struggling with substance use, physical health problems, and mental health conditions who also required prescription drugs navigated three separate programs in order to receive the full array of benefits and services the individual required. Through the integration of Medicaid services, Heritage Health removes barriers to addressing all the health needs of each beneficiary with a streamlined, person- centered approach. The SUD demonstration builds on these recent changes.

Table 3 Milestones for 1115 Demonstrations Addressing Opioids and Other Substances

	Milestones	Specifications and Proposed Timeframes
1	Access to Critical Levels of Care for OUD and other SUDs	Coverage of a) outpatient, b) intensive outpatient services, c) medication- assisted treatment (medications as well as counseling and other services with sufficient provider capacity to meet needs of Medicaid beneficiaries in the state), d) intensive levels of care in residential and inpatient settings, and e) medically supervised withdrawal management *Proposed Timeframe: Within 12 to 24 months of demonstration approval*
2	Use of Evidence-based, SUD-specific Patient Placement Criteria	1. Implementation of requirement that providers assess treatment needs based on SUD-specific, multi-dimensional assessment tools, e.g., the ASAM Criteria, or other patient placement assessment tools that reflect evidence-based clinical treatment guidelines *Proposed Timeframe: Within 12 to 24 months of demonstration approval* 2. Implementation of a utilization management approach such that a) beneficiaries have access to SUD services at the appropriate level of care, b) interventions are appropriate for the diagnosis and level of care, and c) there is an independent process for reviewing placement in residential treatment settings. *Proposed Timeframe: Within 24 months of demonstration approval*
3	Use of Nationally Recognized SUD-specific Program Standards to Set Provider Qualifications for Residential Treatment Facilities	1. Implementation of residential treatment provider qualifications in licensure requirements, policy manuals, managed care contracts, or other guidance. Qualification should meet program standards in the ASAM Criteria, or other nationally recognized, evidence-based SUD-specific program standards regarding in particular the types of services, hours of clinical care, and credentials of staff for residential treatment settings *Proposed Timeframe: Within 12 to 24 months of demonstration approval* 2. Implementation of state process for reviewing residential treatment providers to assure compliance with these standards *Proposed Timeframe: Within 24 months of demonstration approval* 3. Requirement that residential treatment facilities offer MAT on site or facilitate access off site *Proposed Timeframe: Within 12 to 24 months of demonstration approval*
4	Sufficient Provider Capacity at Critical Levels of Care including for Medication Assisted Treatment for OUD	Completion of assessment of the availability of providers enrolled in Medicaid and accepting new patients in the critical levels of care throughout the state (or at least in participating regions of the state) including those that offer MAT. Expanded telehealth reporting requirements *Proposed Timeframe: Within 12 months of demonstration approval*
5	Implementation of Comprehensive Treatment and Prevention Strategies to Address Opioid Abuse and OUD	1. Implementation of opioid prescribing guidelines along with other interventions to prevent opioid abuse *Proposed Timeframe: Over the course of the demonstration* 2. Expanded coverage of, and access to, naloxone for overdose reversal *Proposed Timeframe: Over the course of the demonstration* 3. Implementation of strategies to increase utilization and improve functionality, of prescription drug monitoring programs *Proposed Timeframe: Over the course of the demonstration*
6	Improved Care Coordination and Transitions between Levels of Care	Implementation of policies to ensure residential and inpatient facilities link beneficiaries, especially those with OUD, with community-based services and supports following stays in these facilities. *Proposed Timeframe: Within 12 to 24 months of demonstration approval*

B. EVALUATION QUESTIONS & HYPOTHESES

The objective of this SUD demonstration project is to improve the State of Nebraska's ability to provide a full continuum of care for people experiencing SUD by improving access to evidence-based SUD treatment, and by improving the quality of available SUD treatment. By doing so, the State seeks to maintain or reduce the cost of care for beneficiaries with SUD. Accordingly, the evaluation questions are:

1. Did the demonstration increase access to health care for beneficiaries with SUD?
2. Did the demonstration improve the quality of SUD treatment?
3. Did the demonstration maintain or reduce total cost of care?

The driver diagrams below illustrate how the three program aims are to be achieved by demonstration activities (secondary drivers). The six CMS-required demonstration goals are primary drivers of increased Access and Quality. Each primary driver represents a testable hypothesis about the impact of the demonstration activities leading to the aim. Table 4 specifies the measures that will be used to assess each hypothesis.

The first aim, access, is targeted through expanded coverage and capacity for SUD treatment. These activities align with CMS Milestones 1 and 4 (Fig. 1). Specifically, the state will add coverage for medically monitored intensive inpatient withdrawal management for adults at ASAM level 3.7-WM, include methadone as a covered form of MAT, and educate providers about the availability of coverage for IMD stays >15 days. Furthermore, residential providers will be required to expand their treatment methods by either offering MAT onsite or facilitating access to MAT off-site. The demonstration also plans to introduce expanded reporting requirements to encourage the use of telehealth for SUD treatment, and will add SUD-specific provider capacity reporting requirements for MCOs that include the number of participating providers accepting new patients by level of care and those that offer MAT. The evaluation hypothesis is that the expanded coverage will increase access to the specified services, which will be reflected in increased utilization, and capacity building activities will increase the number of people receiving any treatment, as well as the number of available providers and beds providing SUD services. An additional hypothesis is that as beneficiaries increasingly receive appropriate SUD services, they will also be more likely to access care for physical health conditions, reflected in increased utilization of ambulatory and preventive care by beneficiaries with SUD.

The second aim, quality, is anticipated to improve as a result of the implementation of several waiver components as well as the expanded coverage (Fig. 2). In order to accomplish Milestone 2, widespread use of evidence-based, SUD-specific patient placement criteria, the demonstration will update MCO contract language to include a requirement that assessment tools used when authorizing or reviewing inpatient stays be based on evidence based clinical treatment guidelines. The demonstration also plans to add SUD treatment specific requirements to the existing annual audit tool used to review all contracted MCOs' compliance with this new contract language. As part of the plan to achieve milestone 3, the demonstration plans to update MCO contract language to include a requirement that the MCOs perform reviews of residential treatment providers to assure all standards regarding service type and expectations, hours of care, and staffing requirements. These changes will be complemented by policy

interventions associated with Milestone 5, which include Implementation of opioid prescribing guidelines, expanded coverage of, and access to, naloxone for overdose reversal, and reforms to prescription drug monitoring programs. In addition, new language will be added to MCO contracts clarifying requirements for the inclusion of policies that link beneficiaries, especially those with OUD, with community-based services and supports following inpatient stays in treatment facilities, including specific timeframes for Care Management contact post discharge from an inpatient stay related to an SUD, in alignment with Milestone 6.

The evaluation hypothesizes that as the demonstration promotes standardized assessment and placement for patients, establishes qualifications for residential providers, and implements processes to assure compliance with treatment standards, these activities in combination will improve the appropriateness and continuity of care for SUD patients, reflected in higher rates of initiation and engagement in treatment, and in greater adherence and retention in treatment, reflected in continuity of MAT. The evaluation further hypothesizes that by promoting evidence-based assessment and referral, the demonstration will support better matching of patients to appropriate treatment settings, and hence improved quality will be reflected in lower rates of ED use and hospital readmission for patients with SUD, and reduced rates of overdose mortality.

The third aim, cost maintenance, is an intended outcome of treating patients in the most appropriate setting and improving follow-up (Fig.3). Improved continuity of care and rates of MAT engagement are expected to enable more individuals to be stabilized in SUD treatment, and to be less frequently in crisis and in need of acute care. As discussed above, improved access is anticipated to increase the utilization of SUD services including IMD stays and outpatient services. It is hypothesized that any increase in claims for treatment, and in longer IMD stays, that result from the demonstration will be balanced by reductions in ED visits and hospital admissions for beneficiaries with SUD. Reduced cost may occur as a result of reduced hospitalizations specifically for SUD, but may also include reduced need for care for comorbid physical or behavioral health conditions that were poorly managed due to untreated SUD and low engagement in primary care. Therefore, the evaluation will test the hypothesis that overall hospital utilization will be reduced for beneficiaries with SUD, as well as the narrower hypothesis that admissions and ED visits specifically for SUD will be reduced. Ultimately, total cost of care for beneficiaries with SUD will be analyzed to test the hypothesis that the increased cost of SUD treatment is balanced by reduced acute care utilization.

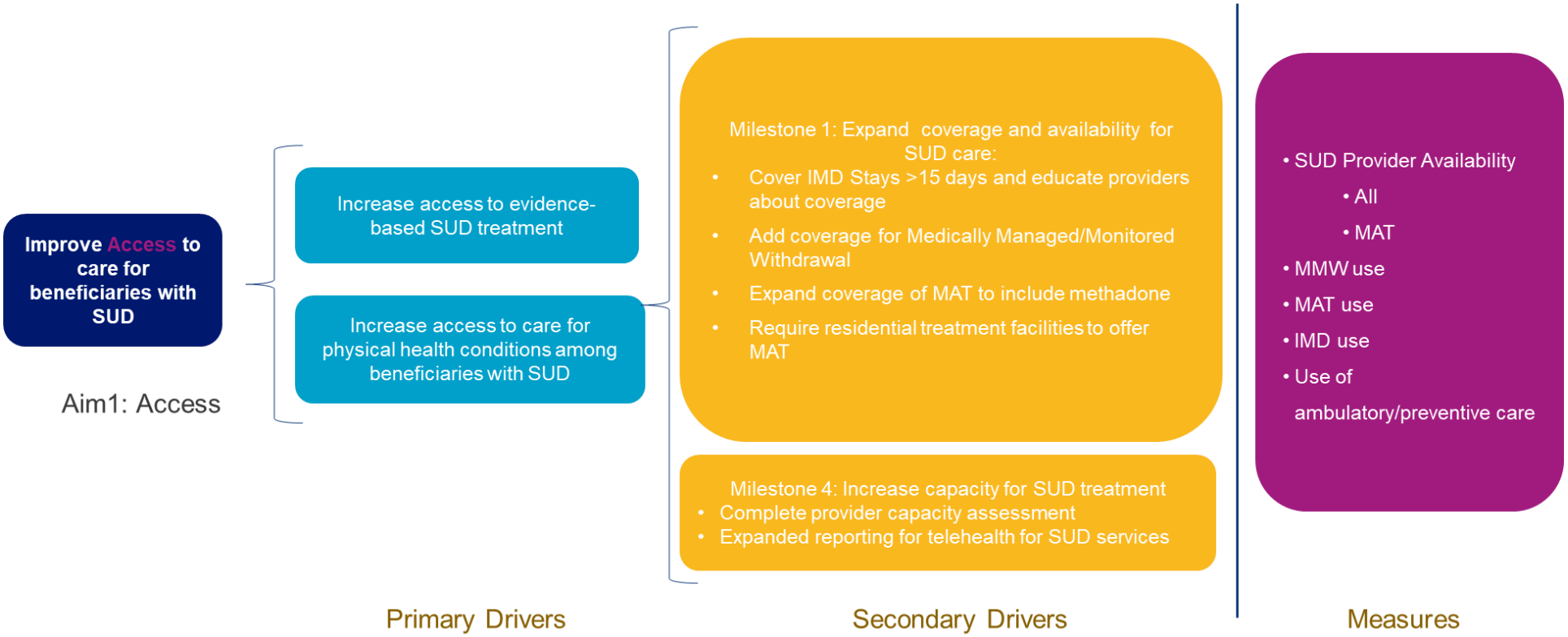

Figure 1 Driver Diagram, Access

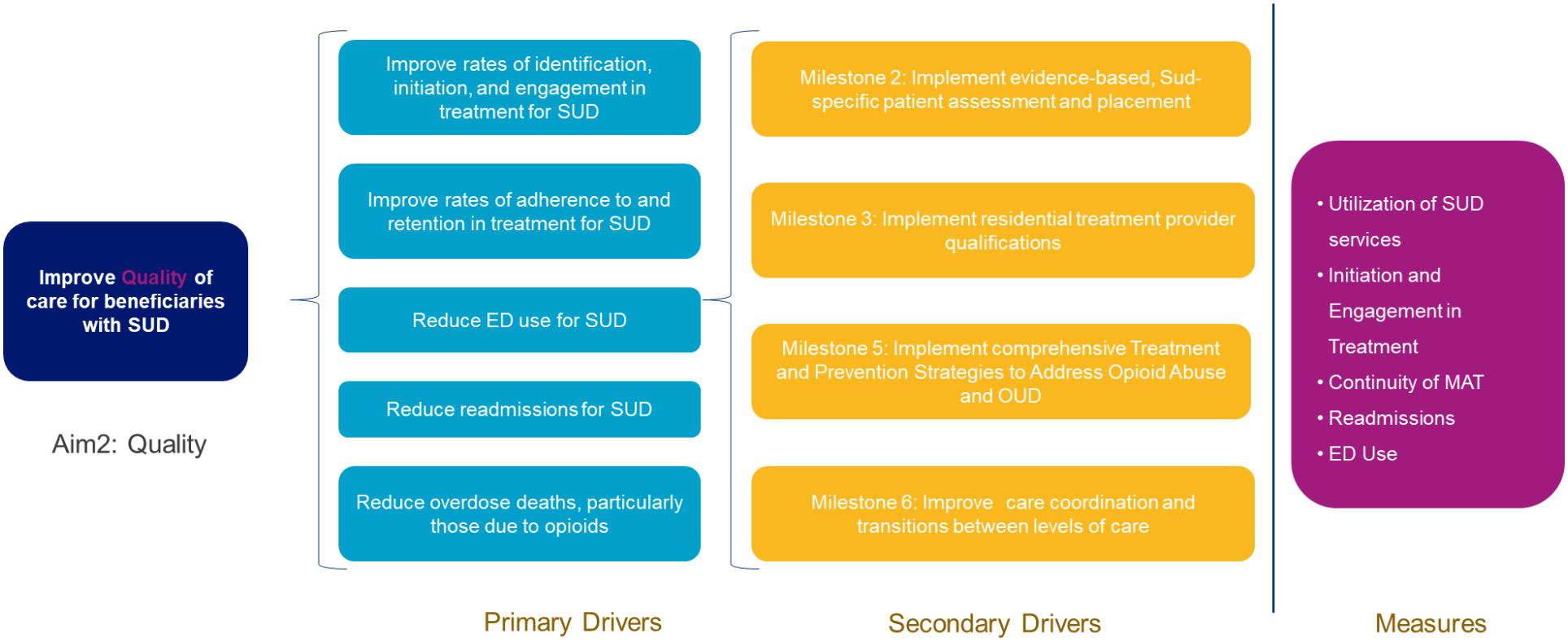

Figure 2 Driver diagram, Quality

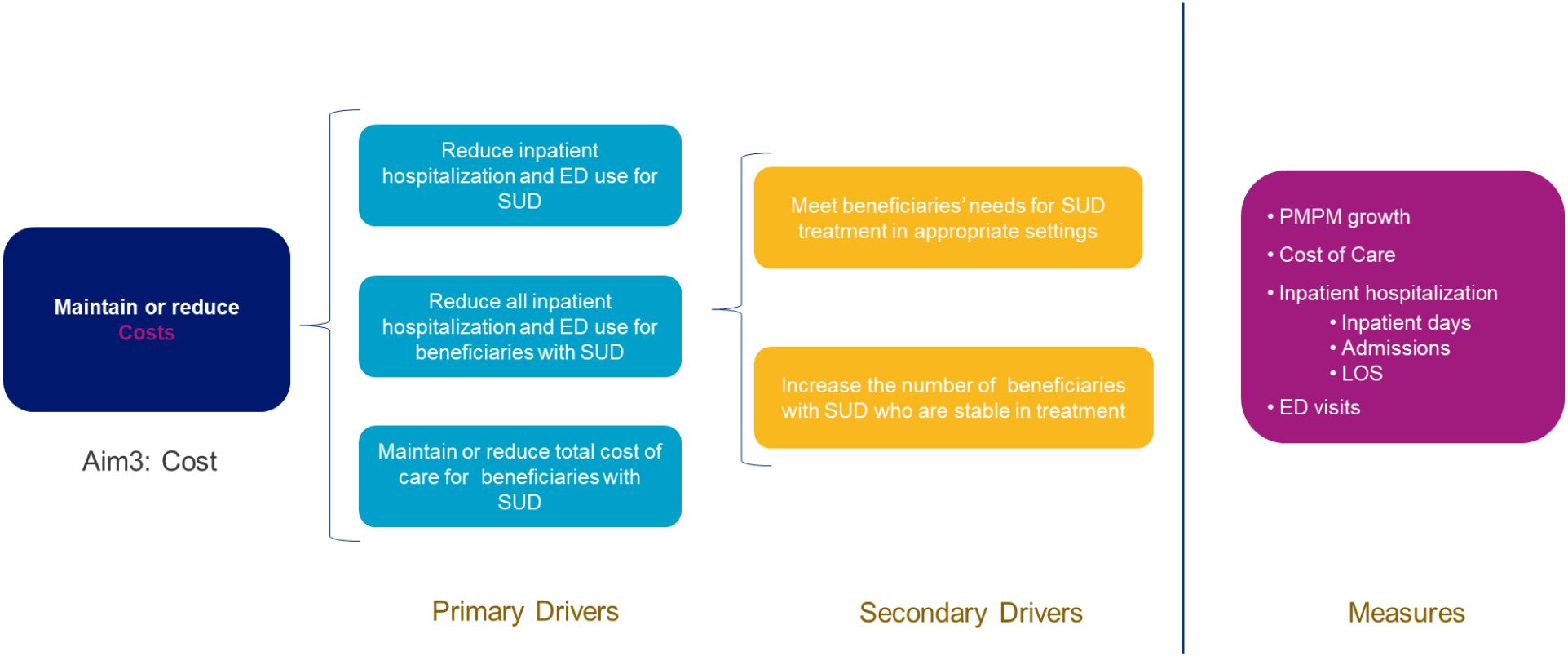

Figure 3 Driver diagram, Cost

Table 4 Evaluation Hypotheses and Measures

Hypothesis	Measure Description	Measure type/Steward	Numerator	Denominator	Data Source	Analytic Approach
Aim 1: Improve Access to health care for beneficiaries with SUD						
Evaluation Question: Did the demonstration improve access to health care for beneficiaries with SUD?						
Demonstration goal/Primary Driver: Increase Access to evidence-based SUD treatment						
The demonstration will increase access to evidence-based SUD treatment, reflected in increased utilization.	Number of beneficiaries receiving any SUD treatment service	CMS-constructed	Number of beneficiaries aged 19-64 with a claim for any services for SUD treatment	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression
	Number of beneficiaries who use residential services for SUD	CMS-constructed	Number of beneficiaries who use residential services for SUD	Number of beneficiaries aged 19-64 with a claim for residential services for SUD	Claims	Descriptive statistics; ITS Regression
	Number of beneficiaries who use withdrawal management services	CMS-constructed	Number of beneficiaries aged 19-64 with a claim for withdrawal management	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Number of beneficiaries who have a claim for MAT for SUD	CMS-constructed	Number of beneficiaries aged 19-64 with a claim for MAT	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Number of IMD stays for SUD	CMS-constructed	Number of IMD stays for beneficiaries aged 19-64 with SUD	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Number of days of IMD treatment for SUD	CMS-constructed	Number of days of IMD treatment for SUD	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Average LOS of IMD stays for SUD	CMS-constructed	Total number of days of IMD treatment for beneficiaries aged 19-64 with SUD	Number of IMD stays for beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
The demonstration will increase access to evidence-based SUD treatment, reflected in increased capacity.	Number of providers enrolled in Medicaid and qualified to deliver SUD services	CMS-constructed	Number of providers enrolled in Medicaid and qualified to deliver SUD services	--	Provider enrollment database; Claims	Descriptive Statistics
	Number of providers enrolled in Medicaid and qualified to deliver MAT for SUD services	CMS-constructed	Number of providers enrolled in Medicaid and qualified to deliver MAT for SUD services	--	Provider enrollment database; Claims	Descriptive Statistics
	Number of beds available in IMD facilities providing SUD services	State-identified (DHHS)	Number of beds available in IMD facilities providing SUD services	--	MCO reporting	Descriptive Statistics

	Number of outpatient facilities offering detoxification	Survey question (SAMHSA)	Number of outpatient facilities offering detoxification	Number of adult residents[11]	N-SSATS	Descriptive Statistics
	Number of facilities offering opioid-specific detoxification	Survey question (SAMHSA)	Number of facilities offering opioid-specific detoxification		N-SSATS	Descriptive Statistics
	Opioid Treatment Programs (OTPs)	Survey question (SAMHSA)	Number of facilities offering Opioid Treatment Programs (OTPs)		N-SSATS	Descriptive Statistics
	Outpatient facilities offering OTPs	Survey question (SAMHSA)	Number of outpatient facilities offering OTPs		N-SSATS	Descriptive Statistics
	Residential (non-hospital) facilities offering OTPs	Survey question (SAMHSA)	Number of residential (non-hospital) facilities offering OTPs		N-SSATS	Descriptive Statistics
	Medication-assisted opioid therapy provided at facilities with OTPs	Survey question (SAMHSA)	Number of facilities with OTPs offering medication-assisted opioid therapy		N-SSATS	Descriptive Statistics
	Any type of medication assisted therapy (MAT)	Survey question (SAMHSA)	Number of facilities offering any type of medication assisted therapy (MAT)		N-SSATS	Descriptive Statistics
	Needing but not receiving treatment at a specialty facility for illicit drug/SUD in the past year	Survey question (SAMHSA)	Estimated rate[12]	--	NSDUH	Descriptive Statistics
Demonstration goal/Primary Driver: Increase Access to care for physical health conditions among beneficiaries with SUD.						
The demonstration will increase access to care for physical health conditions among beneficiaries with SUD	The percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit.	Quality measure (HEDIS)	Number of unique beneficiaries with SUD diagnosis, and specifically those with OUD, who have a claim for an ambulatory or preventive care visit in the past 12 months	Total number of beneficiaries aged 19-64 with SUD/OUD	Claims	Descriptive statistics; ITS Regression

[11] N-SSATS measures will be used as reported (number of facilities) for comparison of demonstration years to baseline. For comparison to national benchmarks, a ratio of facilities to the size of the adult population will be calculated.

[12] The NSDUH reports estimated prevalence for each survey question. For detailed methodology, see Substance Abuse and Mental Health Services Administration. (2019). Results from the 2018 National Survey on Drug Use and Health: Detailed tables. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data/

Aim 2: Improve Quality of Care for Beneficiaries with SUD

Evaluation Question: Did the demonstration improve the quality of SUD treatment?

Demonstration Goal/Primary Drivers: Improve rates of identification, initiation, engagement, adherence, and retention in treatment for SUD

The demonstration will Improve rates of identification, initiation, and engagement, in treatment for SUD	Percentage of beneficiaries who initiated treatment within 14 days of a new SUD diagnosis	Quality measure NCQA; NQF #0004; Medicaid Adult Core Set; Adjusted HEDIS measure	Beneficiaries with a claim for treatment within 14 days	Total number of beneficiaries aged 19-64 with a new diagnosis of SUD	Claims	Descriptive statistics; ITS Regression
	Percentage of beneficiaries who initiated treatment and who had two or more additional services for SUD within 34 days of the initiation visit.		Beneficiaries with two or more claims for SUD treatment within 34 days	Total number of beneficiaries aged 19-64 with a new diagnosis of SUD	Claims	Descriptive statistics; ITS Regression
The demonstration will improve rates of adherence to and retention in treatment for SUD	Continuity of pharmacotherapy for OUD	Quality measure USC; NQF #3175	Beneficiaries who have at least 180 days of continuous treatment	Total number of beneficiaries aged 19-64 receiving MAT for OUD	Claims	Descriptive statistics; ITS Regression
The demonstration will reduce ED use for SUD	Number of ED visits for SUD	DHHS	Total number of claims for ED visits for SUD	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression
The demonstration will reduce readmissions for SUD	30-Day Readmission	CMS-constructed	Number of acute inpatient stays among beneficiaries with SUD followed by an acute readmission within 30 days	Number of acute inpatient stays among beneficiaries with SUD	Claims	Descriptive statistics; ITS Regression
The demonstration will reduce overdose deaths, particularly those due to opioids	Rate of overdose deaths, overall, and due to opioids	CDC	Total number of overdose deaths; Total number of deaths due to opioid overdose	Total adult population of the state	National Center for Health Statistics	Descriptive statistics;

Aim 3: Maintain or reduce costs

Evaluation Question: Did the demonstration maintain or reduce total cost of care?

Demonstration Goal/Primary Driver: Reduce inpatient hospitalization and ED use for SUD

The demonstration will reduce inpatient hospitalization and ED use for SUD	Number of inpatient stays for SUD	CMS-constructed	Number of beneficiaries aged 19-64 with a claim for an inpatient stay for SUD	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression
	Number of days of inpatient hospitalization for SUD	CMS-constructed	Total number of days of inpatient treatment for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression
	Average LOS of inpatient hospitalization for SUD	CMS-constructed	Total number of days of inpatient treatment for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression
	Number of ED visits for SUD	CMS-constructed	Total number of claims for ED visits for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64	Claims	Descriptive statistics; ITS Regression

Demonstration Goal/Primary Driver: Reduce inpatient hospitalization and ED use for beneficiaries with SUD

The demonstration will reduce inpatient hospitalization and ED use for beneficiaries with SUD	Number of inpatient stays for any cause	CMS-constructed	Number of beneficiaries aged 19-64 with a claim for an inpatient stay for SUD	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Number of days of inpatient for any cause	CMS-constructed	Total number of days of inpatient treatment for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Average LOS of inpatient hospitalization for any cause	CMS-constructed	Total number of days of inpatient treatment for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
	Number of ED visits for any cause	CMS-constructed	Total number of claims for ED visits for SUD for beneficiaries aged 19-64	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
Demonstration Goal/Primary Driver: Reduce or maintain total cost of care for beneficiaries with SUD						
The demonstration will reduce or maintain total cost of SUD-related care	PMPM Cost for SUD treatment	CMS-constructed	PMPM cost of all claims for any SUD diagnosis for beneficiaries age 19-64	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression
The demonstration will reduce or maintain total cost of care	PMPM Cost	CMS-constructed	PMPM cost for beneficiaries age 19-64 with SUD	Total number of beneficiaries aged 19-64 with SUD	Claims	Descriptive statistics; ITS Regression

C.METHODOLOGY

The evaluation will employ mixed methods to investigate the demonstration's impact on access, quality, and cost. For each of the three aims, quantitative analysis of claims and other reported metrics will test the evaluation hypotheses described in Table 4. Additional insight into quality and access will be derived from analysis of national survey data, and from qualitative sources including key informant interviews.

1.Evaluation design

The primary approach for testing evaluation hypotheses will be an Interrupted Time Series (ITS) analysis of claims and administrative data. ITS regression will be used to compare the trend in each outcome during the 24-month pre-demonstration period to the period from demonstration launch until the end of the demonstration. Unlike a simple pre-post design, ITS can analyze trends over time in outcome variables. This will allow for greater sensitivity to changes in outcomes that may have been increasing or decreasing at baseline. Additionally, stratification by region, demographics, and other populations of interest will be used to investigate whether disparities exist and if so whether they have been reduced. Subgroup analysis will be performed for gender, race/ethnicity, pregnant women, beneficiaries dually eligible for Medicare, and presence of a co-occurring mental health diagnosis.

Quality and access to SUD treatment will be investigated in more depth through semi-structured interviews with providers and administrators. These interviews will provide a nuanced picture of implementation successes and challenges, and perceived impact.

National survey data will be used to supplement these approaches. The National Survey of Substance Abuse Treatment Services (N-SSATS) will be used to identify increases in the number of facilities offering detoxification and MAT/OTP services. The ratio of facilities offering each service to the size of the adult population will be used as a crude metric of system capacity for comparison to the national ratio. The National Survey of Drug Use and Health (NSDUH) will be used to determine whether the demonstration reduces the rate of needing but not receiving SUD services, which will be compared to the national rate. While national benchmarks are an imperfect comparison, and neither survey crosswalks these measure with Medicaid enrollment, these two datasets will provide context for Nebraska's results.

2.Target and Comparison Populations

The population studied will be adult Medicaid beneficiaries aged 19-64 who have an SUD diagnosis, including those who become eligible as a result of the expansion of Nebraska's Heritage Health program. DHHS anticipates an increase of approximately twofold in the number of adult beneficiaries beginning October 1, 2020 with the launch of the HHA expansion (Table 5). Current actuarial projections do not predict that the expansion population will differ significantly in acuity or prevalence of SUD from the existing adult population. Because Nebraska Medicaid is rarely the primary payer for beneficiaries aged $\geq$65, older adults are not specifically targeted by this demonstration, and data for this population is expected to be incomplete. Similarly, adolescents under age 19 will have access to services provided under the waive authority, but are not specifically targeted, and will not be included in the evaluation analysis.

Table 5 Evaluation Population Size

Estimated population size Unique individuals per year			
	Total Adult Beneficiaries	SUD Dx	OUD Dx
Pre-demonstration (Average 2018-19)	83,500	4,949	770
Demonstration* (Estimated)	175,349	10,392	1617

Because all Medicaid beneficiaries are eligible for services under the waiver, no true comparison population is available for this demonstration. Using the ITS approach, the comparison is of post-waiver trends to pre-waiver trends. For additional context, comparisons of statewide outcomes to national trends and other states will be made, but are not considered a true counterfactual, as other states are different at baseline, and many also are implementing similar programs.

The analysis will employ a repeated cross-sectional approach, including all member months for a given quarter. This will include all adult beneficiaries who were enrolled during the quarter, regardless of duration. Individuals who have an SUD diagnosis or claim (as defined in CMS guidance) in the previous 12 months will be included in the evaluation population. Two years of claims data prior to the demonstration period will be used to identify individuals to be included in the pre-demonstration period, in order to more accurately identify beneficiaries with an SUD condition. Individuals who are identified as having received an SUD-related service through the Division of Behavioral Health[13] during the past 12 months will also be included.

3.Evaluation Period

The evaluation period will include 24 months prior to the launch of the demonstration as a baseline. The formal launch date, July 9, 2019, marked the beginning of a ramp-up period when waiver provisions were being disseminated and newly implemented. Coverage for IMD stays >15 days was available immediately, but MMW and MAT/OTP coverage required extensive preparation. Table 1 shows the dates when new services were first offered. Because MMW and MAT/OTP services are expected to be offered beginning around Oct 1, 2020, the demonstration should not be considered fully launched until that time. The evaluator will conduct sensitivity analysis examining the demonstration years separately to detect a delay in the demonstration's impact. Heritage Health Expansion will launch October 1, 2020, beginning inclusion of the newly eligible adult population. Sensitivity analysis will also consider the post-expansion period separately as the influx of new beneficiaries, and broader changes to the system, may alter the impact of the demonstration. The evaluation period will end at the close of the demonstration in June 2024, resulting in a 60-month post-intervention period.

[13] DHHS is currently investigating the feasibility and legal authority to use data from DBH to improve the accuracy of identifying the target population.

Table 6 Overall timeframe and duration of the pre-intervention and post-intervention periods.

Evaluation period	Calendar Dates	Duration
Pre-Intervention	July 9 2017 - July 8 2019	24 months
Post Intervention	July 9 2019-June 30 2024	60 months

4.Evaluation Measures

Measures that will be used for evaluation of Access, Quality, and Cost are summarized in Driver Diagrams, and described in detail in Table 4, Evaluation Hypotheses and Measures.

Access will be assessed through two categories of measures: utilization and capacity. Utilization measures will be drawn from claims for the specific SUD services listed. Capacity measures will be drawn from the state's provider enrollment database, and from MCO non-claims reporting, to determine numbers of Medicaid-enrolled facilities providing SUD services. Additional measures from SAMHSA surveys will be used to compare the state's progress on access to national benchmarks. The National Survey of Substance Abuse Treatment Services (N-SSATS) will be used to investigate whether the state's capacity for providing SUD treatment services increases during the demonstration through the addition of new services at residential treatment facilities. The national ratio of facilities to adult population size will serve as a benchmark. As shown in Table 2, compared to the US at large, the state has fewer facilities offering detoxification and MAT/OTP services relative to adult population size. This is a crude metric of system capacity, because number of facilities does not take into account the capacity of those facilities, or the number of individuals needing treatment. However, because Nebraska currently has so few facilities offering these services, it is anticipated that the addition of Medicaid coverage will increase this number, which will be reflected in a higher ratio of facilities to the size of the adult population. Another national benchmark for comparison is the rate of needing but not receiving SUD treatment, as reported in the National Survey on Drug Use and Health (NSDUH). In 2018, NE's rate was similar to the US (2.51, 95%CI 1.98 - 3.18 NE, vs 2.54, 95% CI 2.42 - 2.66 US) despite lower SUD prevalence.[14] If the demonstration succeeds in increasing access to SUD treatment, the rate of needing but not receiving is expected to decrease.

Quality will be assessed using standard SAMHSA measures of initiation and engagement in treatment, retention in treatment, and continuity of treatment. All are derived from claims. Downstream measures of quality (reflecting outcomes not avoided by treatment) are ED visits, readmissions, and overdose deaths. Overdose deaths will be derived from CDC reports, as the state does not track this information in sufficient detail. This will not allow the identification of Medicaid beneficiaries so the rate will be for the state rather than the demonstration target population.

[14] Substance Abuse and Mental Health Services Administration. (2019). Results from the 2018 National Survey on Drug Use and Health: Detailed tables. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data/

Three types of cost measures are included in Table 4; acute care (ED or inpatient hospital use) for SUD by any beneficiary, acute care for any cause by a beneficiary with SUD, and total cost of care for beneficiaries with SUD. Cost of acute care for SUD is hypothesized to decrease as a result of wider access to and participation in SUD treatment. All beneficiaries are included in the denominator for this measure. Because unmanaged SUD can worsen other conditions, leading ED visits or inpatient admissions, cost of all acute care for beneficiaries with SUD will also be tracked to determine whether stabilizing these individuals in treatment reduces these costs as well. Finally, total cost of care for beneficiaries with SUD, including care for SUD and other causes, in all settings, will be included to assess whether the costs of providing SUD treatment are balanced by reduced costs in other services.

5.Data Sources

Secondary Data

The measures used for evaluation are listed in Table 4. Most are derived from claims and administrative data and will be reported to CMS as part of the approved SUD waiver monitoring protocol. National survey data from NSDUH and N-SSATS will be obtained from SAMHSA. Overdose mortality data will be obtained from the CDC/National Center for Health Statistics.

Claims Data

MCO claims data is submitted at least weekly, and uploaded monthly to the state's data warehouse. Late or incomplete submissions have not been common, and have been resolved promptly, rarely impacting the monthly upload.

The Nebraska Medicaid program is also in the development process for a new data warehouse and business intelligence technology platform. Development for this Data Management and Analytics (DMA) project began in February of 2018 and is scheduled for go-live in November 2020. For example, currently contracted Heritage Health plans submit pharmacy encounter data based on Nebraska's proprietary pharmacy encounter format. The proprietary format is necessitated by the limitations of the state's legacy MMIS system. With the completion of the DMA project, Heritage Health plans will submit encounter data utilizing a NCPDP standard transaction format. The NCPDP standard format will provide the Nebraska Medicaid program with significantly more information about each pharmacy encounter than is currently captured within the proprietary format. While the changeover presents some risk, the state expects that the new DMA platform will have a positive impact on this demonstration, allowing for more detailed data collection and reporting that facilitates both implementation and evaluation.

Primary Data

Key Informant Interviews

Qualitative data will be gathered through document review and key informant interviews. Semi-structured key informant interviews with lasting 30-45 minutes will be conducted by phone or videoconference, with privacy protections in accordance with CMS guidelines. Interviews will be recorded and transcribed. Interview guides will be developed by the IE in collaboration with DHHS for providers, and for state administrators involved in implementation of the waiver demonstration.

As appropriate, interviews will explore program implementation, and topics drawn from the Access and Quality driver diagrams; examples are shown in Table 7.

Based on the unique count of NPI numbers with specialty 26 (psychiatry/mental health/substance abuse) for providers billing Medicaid, excluding those who are not billing independently, Nebraska had 506 SUD provider access points as of November 2019. An informative sample of providers will be drawn from this pool, with attention to diversity in region, role, and facility type, e.g. residential or outpatient. Two waves of interviews will be conducted, in order to explore changes over the course of implementation (Table 8). Where possible, providers who participated in wave 1 will be re-interviewed for wave 2. Where the original interviewee is not available, another provider from the same facility will be interviewed if one is available; otherwise, the evaluator will seek to interview another provider with the same specialty practicing in a similar institutional setting. For administrators, the evaluator will seek to include the same roles – which may or not be the same individuals – in wave 2 as in wave 1. Interviewees will be compensated for their participation with a gift card.

Table 7 Example Topics to be Included in Key Informant Interviews

Research Question	Demonstration Goals	Example topics
1.In what ways did (or did not) the demonstration increase access to health care for beneficiaries with SUD?	• Access to evidence-based SUD treatment • Access to care for physical health conditions	• Perceived impact of new rules on the ease of placing patients in appropriate settings • Perceived impact of new rules on the availability of a full continuum of care for SUD, including MAT services • Existing or planned growth in capacity due to rule changes or SUD IMD demonstration authority.
2.In what ways did (or did not) the demonstration improve the quality of SUD treatment?	• Identification, initiation, and engagement in treatment for SUD • Adherence to and retention in treatment for SUD • Reduced ED visits and readmissions • Reduced OD deaths	• Perceived impact of new rules on ease of engaging and retaining beneficiaries in treatment for SUD • Perceived impact of rule revisions on discharge planning in residential care settings and service delivery post-discharge
3.What changes might make the demonstration more effective in achieving program goals of increased access and improved quality?	• Implementation challenges and successes	• Provider familiarity with new rules for coverage • Perceived impact of rule changes on administrative burden • Suggestions for improvements or course corrections

Table 8 Key Informant Interviews

	Number of interviews
Wave 1 (Demonstration year 2)	
Providers	30-35
Administrators	8-12
Wave 2 (Demonstration year 4)	
Providers	30-35
Administrators	8-12
Total	76-94

MCO non-claims reporting

All MCOs receiving Nebraska Medicaid payments are required to submit templated reports including non-claims data, quality measures, and qualitative information on required activities. New reporting requirements will include ASAM critical levels of care including IMD stays MAT/OTP. MCOs will be required to submit reports on an ad hoc basis throughout the demonstration.

During the demonstration period, all MCOs will be required to conduct an assessment of provider capacity, and report the results to the state. Currently MCOs are required to report SUD/BH health network capacity and access at a county level. Each MCO submits a standard set of required data that includes number and average distance from providers by county, and by classification (urban, rural, frontier). New requirements currently under development will mandate reporting of this same information decomposed by critical (ASAM) level of care including MAT/OTP.

Provider Enrollment Database

All providers must be listed in the state's provider enrollment database before MCOs can contract with them for Medicaid-reimbursed services. The state's list of Medicaid-enrolled providers is updated at least weekly. The number of providers offering SUD treatment or specific services will be obtained by linking claims data to the provider enrollment database.

6.Analytic Methods

Descriptive statistics

The IE will use descriptive statistical methods to generate summary tables of population size and characteristics, outcomes for the pre and post demonstration periods, and distribution of outcomes by demographic characteristics and relevant subgroupings. Data will be analyzed using standard tests as rates, proportions, frequencies, and measures of central tendency (e.g., mean, median, mode). These tables will be used to develop a quantitative picture of the population, to describe raw trends, and to identify characteristics that will be included as covariates in regression modeling. Prior to performing regression analysis, the expansion and non-expansion populations will be compared using t-tests to confirm that the two groups do not differ significantly in demographic or clinical characteristics that would make the comparison to baseline inappropriate. ANOVA/MANOVA tests will be used as a first pass comparison of mean outcomes for demonstration years to pre-demonstration years. For metrics derived from NSDUH and N-SSATS survey data, results for Nebraska will be compared to national results for each year based on the reported confidence interval (NSDUH) or by calculating a ratio of number of facilities to adult population size (N-SSATS).

ITS regression modeling

The evaluation will use ITS analysis to test for different linear effects in the pre-demonstration and post-demonstration periods. The function for an example outcome C is described in table 9 below.

Table 9 Interrupted Time Series function

Equation	
$$C = \beta 0 + \beta 1 * TIME + \beta 2 * POST + \beta 3 * (TIME * POST) + \beta i * COVAR + \varepsilon$$	
Variable	Description
TIME	A count variable that starts with the first quarter pre-demonstration period data and ends with the last quarter of post-demonstration period data.
POST	An indicator variable that equals 1 if the month occurred on or after demonstration start date.
COVAR	A set of covariates, such as age, gender, race, dual Medicare-Medicaid enrollment, and month.

The marginal effect and standard error for each term will be derived and reported. The average marginal effect of the interaction term (β3*TIME*POST) represents the apparent difference between the pre- and post-demonstration periods. Table 4 indicates the hypothesis for each outcome.

Qualitative analysis

Qualitative analysis will be used for key informant interview transcripts. The goal of the analysis is to identify perceptions of providers and administrators regarding the ways the demonstration did or did not achieve the program goals of increased access and improved quality. These perceptions will be used in combination with quantitative analysis to understand demonstration impact, and also to identify challenges or potential course corrections for consideration by the state.

The research questions to be addressed are:

1. In what ways did (or did not) the demonstration increase access to health care for beneficiaries with SUD?
2. In what ways did (or did not) the demonstration improve the quality of SUD treatment?
3. What changes might make the demonstration more effective in achieving program goals of increased access and improved quality?

As shown in Table 7, interviews will address these questions by probing for perspectives on the implementation and outcomes of the demonstration. Thematic analysis using a coding tree derived from the access and quality driver diagrams will be used to excerpt transcripts. Additional themes that arise during coding will be added to the analysis. Results of the research questions 1 and 2 will be used to add context to the quantitative findings regarding access and quality. Results of research question 3 will be reported as a distinct section, and will inform the Evaluation Report chapter on Lessons Learned and Recommendations.

D. CHALLENGES AND METHODOLOGICAL LIMITATIONS

1. Lack of a true comparison group

The target population for the demonstration is Nebraska Medicaid beneficiaries with SUD. A true comparison group for this demonstration would be an equivalent population of Medicaid beneficiaries who are not offered the services provided through the waiver. Because all beneficiaries with SUD are eligible for the demonstration, a true comparison group is not available. Nebraska residents not eligible for Medicaid, and residents of other states, are different in demographics and acuity, and will have access to a varied range of SUD services depending on their coverage or uninsured status. The most rigorous method available is the interrupted time series regression, which will compare trends during the demonstration period to trends in the pre-intervention time period.

2. Expansion of Medicaid population

Beginning in Oct 2020, the expansion of Heritage Health is expected to grow the Nebraska Medicaid adult population from approximately 64,000 individuals to approximately 117,000 during the first year, and 144,000 in the second year, with more gradual increases in following years. If the prevalence of SUD stays unchanged, this is expected to increase the number of individuals with SUD from approximately five thousand to over ten thousand unique individuals per year. The large influx of individuals who were not eligible during the pre-demonstration

period is a limitation to the interpretation of the ITS comparison. Current actuarial models suggest that the expansion population is not significantly different from the non-expansion adult population in acuity or key variables, which mitigates concerns about the differences between the pre and post demonstration time periods. To further mitigate this limitation, the evaluator will conduct the ITS modeling with and without the expansion population to determine whether the result changes when they are included.

3. Sample size

The number of Nebraska Medicaid beneficiaries with SUD (See Table 5) is estimated at 10,392 unique individuals per year during the demonstration period, which may not be large enough to conduct statistical analysis on all subgroups of interest. Moreover, evaluation measures are with few exceptions collected for the full SUD population, but some may be most applicable to individuals with OUD, which represents only 16% of the SUD population. The estimated 1617 individuals with OUD per year may not be enough to drive change for the full evaluation population. For this reason, the evaluator will analyze the OUD subgroup separately as well, to determine whether changes can be detected specifically among individuals with OUD. The small size of the OUD sample may limit sensitivity and significance of the results.

4. Identification of beneficiaries with SUD

Individuals will be included in the evaluation if they have an SUD diagnosis or claim within the previous 12 months, based on CMS guidelines. Individuals with an SUD that has not resulted in a diagnosis or treatment will not be detected. Because some beneficiaries transition on and off Medicaid, a full 12 months of claims may not be available for all individuals, and there is a risk of missing individuals who have SUD due to incomplete data. This is especially true for individuals newly eligible as a result of HHA expansion. This is likely to lead to an under-identification of beneficiaries with an SUD, but is preferable to excluding individuals who lack 12 months of continuous data. In order to mitigate the under-identification, DHHS is investigating the feasibility and legal authority to use data from the Division of Behavioral Health which could identify newly enrolled individuals who received an SUD-related service in the past 12 months.

The failure to detect individuals who have SUD but are not identified due to incomplete data has a similar effect as failure to detect individuals with undiagnosed SUD. Incomplete identification will reduce the sample size, and could alter the characteristics of the population, which should be considered in interpretation of the results.

5. Data availability

Overdose prevention is not a primary target of the demonstration, but the frequency of lethal overdose may be reduced because of improved access to and quality of SUD treatment. Overdose mortality was not tracked in Nebraska during the pre-demonstration period, so no baseline is available in state data. Data from the CDC will be used to measure fatal overdose, which will produce a rate for the state adult population as a whole, rather than specific to Medicaid beneficiaries. For 2018, the CDC and NIDA reported a rate of 7.4 per 100,000 for all

overdoses, and 3.3 for opioid overdoses.[1516] Because the rate is low at baseline, and the demonstration target population is only a portion of the population contributing to the state rate, any impact of the demonstration on overdose rates among the target population may be too small for the evaluation to detect.

[15] National Center for Health Statistics, 2019. Retrieved from https://www.cdc.gov/nchs/pressroom/sosmap/drug_poisoning_mortality/drug_poisoning.htm

[16] NIDA. 2020, July 2. Nebraska: Opioid-Involved Deaths and Related Harms. Retrieved from https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state/nebraska-opioid-involved-deaths-related-harms on 2020, July 15

ATTACHMENTS

A. Independent Evaluator

Procurement for an evaluation contractor to assist the State in executing its SUD demonstration evaluation plan will be pursuant to the State of Nebraska procurement guidelines with resulting agreement contingent upon approval from Nebraska's Governor and Executive Council. The State retains responsibility for monitoring the SUD delivery system, mid-point assessment of the program's effectiveness and overall demonstration performance. To mitigate any potential conflict of interest, the evaluation contractor is responsible for:

- Secondary analysis of data collected for monitoring purposes;
- Benchmarking performance to national standards;
- Evaluating changes over time;
- Interpreting results; and
- Producing evaluation reports.

As part of the focused IMD evaluation, the evaluator is responsible for final measure selection, identifying, if viable, other State systems that may serve as comparisons, conducting all data analysis, measuring change overtime and developing sensitivity models as necessary to address study questions.

The State anticipates one procurement for all evaluation activities and the production of required CMS reports. The successful bidder will demonstrate, at a minimum, the following qualifications:

- The extent to which the evaluator can meet State RFP minimum requirements;
- The extent to which the evaluator has sufficient capacity to conduct the proposed evaluation, in terms of technical experience and the size/scale of the evaluation;
- The evaluator's prior experience with similar evaluations;
- Past references; and
- Value, e.g., the assessment of an evaluator's capacity to conduct the proposed evaluation with their cost proposal, with consideration given to those that offer higher quality at a lower cost.

Consistent with the requirements of 42 CFR § 431.420, Nebraska DHHS will select and retain an independent evaluator to complete the independent evaluation of the demonstration required under 42 CFR § 431.424. DHHS will utilize the State of Nebraska's procurement process to contract with this evaluator and promote an independent evaluation, through the general requirements for each state contractor as well as project-specific standards. These include requirements for third-party contractors to avoid conflicts of interest, adhere to the project's designated scope of work, and maintain professional independence from Department staff and others. Each bidding party will submit a proposal to DHHS that attests to present satisfaction of these requirements, and DHHS Procurement staff and MLTC will work with the evaluator to identify and address concerns that arise during the administration of the contract. By requiring initial satisfaction of these standards by the contracting party in order to be awarded the contract, as well as ongoing maintenance of the requirements during the term of service, DHHS will be in a position to receive an objective evaluation report that is the product of a fair, impartial, and conflict-free evaluation.

B. Budget

Table B1 shows the total estimated cost for evaluation activities through the demonstration years and two years beyond.

Table B1 Budget for Evaluation Activities

	Total Estimated Cost							
Evaluation Activity	DY1 7/1/2019-6/30/2020	DY2 7/1/2020-6/30/2021	DY3 7/1/2021-6/30/2022	DY4 7/1/2022-6/30/2023	DY5 7/1/2023-6/30/2024	POST Y6 7/1/2024-6/30/2025	POST Y7 7/1/2025-6/30/2026	**Total**
Project Management (e.g. regular project meetings, status updates and ad hoc discussions)	$0	$14,976	$19,968	$34,528	$19,968	$19,968	$19,968	$129,376
Semi-Structured Interviews Data Collection and Analysis	$0	$18,678	$118,144	$8,424	$115,024	$0	$0	$260,270
Quantitative Data Collection, Cleaning and Analysis	$0	$40,123	$53,498	$53,498	$53,498	$40,123	$0	$240,739
Interim Evaluation Report Generation	$0	$0	$0	$135,824	$21,029	$0	$0	$156,853
Summative Evaluation Report Generation	$0	$0	$0	$0	$0	$0	$204,464	$204,464
Total	$0	$73,778	$191,610	$232,274	$209,518	$60,091	$224,432	$991,702

C. Timeline and Milestones

Table C1 Timeline and Milestones for Evaluation

		DY1	DY2	DY3	DY4	DY5	POST Y6	POST Y7
Milestones	**Dates**	**7/1/2019-6/30/2020**	**7/1/2020-6/30/2021**	**7/1/2021-6/30/2022**	**7/1/2022-6/30/2023**	**7/1/2023-6/30/2024**	**7/1/2024-6/30/2025**	**7/1/2025-6/30/2026**
Evaluation Design	4/30/2020	X						
Procurement of IE	TBD		X					
Data Collection	10/1/2020-6/30/2024		X	X	X	X	X (runout)	
Analysis	Ongoing		X	X	X	X	X	X
KII Wave 1	7/1/2021-12/30/2021			X				
Interim Evaluation Report	6/30/2023				X			
KII Wave 2	7/1/2021-12/30/2021					X		
Summative Evaluation Report	1/30/2026							X

Appendix C. Measure Specifications

Appendix C contains the measure specifications for each of the 34 measures evaluated for the Nebraska Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver). The Waiver population includes all Medicaid beneficiaries aged 19–64.

Percentage of Beneficiaries Receiving Any SUD Treatment Service (Measure 1)	
Numerator	Among beneficiaries identified in the denominator, the number of beneficiaries aged 19-64 with a claim for any services for SUD treatment
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Analytic Approach	Interrupted time series (ITS) regression
Measure Steward	Centers for Medicaid & Medicare Services (CMS)
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Notes for measure calculation	Measure specifications rely on modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #6: Any SUD Treatment**. Since Metric #6 utilizes the entire Medicaid beneficiary population as the denominator, the denominator for calculating this measure was modified to use **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).

Percentage of Beneficiaries Who Use Residential Services for SUD (Measure 2)	
Numerator	Among beneficiaries identified in the denominator, the number of beneficiaries who use residential services for SUD
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Analytic Approach	ITS regression
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Notes for measure calculation	Measure specifications rely on modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #10: Residential and Inpatient Services**. The numerator of Metric #10 was modified to exclude inpatient services, such that only claims for residential treatment are included in the numerator. Since Metric #10 utilizes the entire Medicaid beneficiary population as the denominator, the denominator for calculating this measure was modified to use **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).

Percentage of Beneficiaries Who Use Withdrawal Management Services (Measure 3)	
Numerator	Among beneficiaries identified in the denominator, the number of beneficiaries aged 19-64 who use withdrawal management services
Denominator	The total number of beneficiaries aged 19-64 with SUD
Comparison Population	N/A
Analytic Approach	ITS regression
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Notes for measure calculation	Measure specifications rely on a modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #11: Withdrawal Management**. Since Metric #11 utilizes the entire Medicaid beneficiary population as the denominator, the denominator for calculating this measure was modified to use **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).

Percentage of Beneficiaries Who Have a Claim for Medication-Assisted Therapy (MAT) for SUD (Measure 4)	
Numerator	Among beneficiaries identified in the denominator, the number of beneficiaries aged 19-64 with a claim for MAT
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Analytic Approach	ITS regression
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Notes for measure calculation	Measure specifications rely on a modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #12: Medication-Assisted Treatment**. Since Metric #12 utilizes the entire Medicaid beneficiary population as the denominator, the denominator for calculating this measure was modified to use **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).

Number of Institution for Mental Disease (IMD) Stays for SUD (Measure 5a)	
Numerator	Among beneficiaries identified in the denominator, the number of IMD stays for SUD
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Measure Steward	CMS
Data Source	Managed care organization (MCO) Report; Claims
Frequency	Monthly
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics

Number of Institution for Mental Disease (IMD) Stays for SUD (Measure 5a)	
Notes for measure calculation	Measure specifications for identifying beneficiaries with SUD rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly). The IMD stay was assigned to the month in which the stay began (admission date).

Number of IMD Stays for SUD (Measure 5b)	
Numerator	Among beneficiaries identified in the denominator, the number of beneficiaries treated in an IMD for SUD
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Measure Steward	CMS
Data Source	MCO Report; Claims
Frequency	Monthly
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	Measure 5b assesses whether changes may be due to a change in the number of members with IMD stays. It serves as a complement to Measure 5a which assess whether there is a change in the number of IMD stays for SUD. Measure specifications for identifying beneficiaries with SUD rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly). The IMD stay was assigned to the month in which the stay began (admission date).

Number of Days of IMD Treatment for SUD (Measure 6)	
Numerator	The number of days of IMD treatment for SUD
Denominator	The total number of beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Analytic Approach	Descriptive statistics
Measure Steward	CMS
Data Source	MCO Report; Claims
Frequency	Monthly
Desired Direction	Higher is better
Notes for measure calculation	Measure specifications for identifying beneficiaries with SUD rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly). The IMD stay was assigned to the month in which the stay began (admission date).

Average Length of Stay of IMD Stays for SUD (Measure 7)	
Numerator	The total number of days of IMD treatment for beneficiaries aged 19-64 with SUD
Denominator	The number of IMD stays for beneficiaries aged 19-64 with an SUD diagnosis
Comparison Population	N/A
Measure Steward	CMS
Data Source	MCO Report; Claims
Frequency	Monthly
Desired Direction	Statewide average length of stay of 30 days in accordance with the Special Terms and Conditions (STCs)
Analytic Approach	Descriptive statistics
Notes for measure calculation	Measure specifications rely on Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0, **Metric #36: Average Length of Stay in IMDs**. The IMD stay was assigned to the month in which the stay began (admission date).

Number of Providers Enrolled in Medicaid and Who Deliver SUD Services (Measure 8)	
Numerator	The number of providers enrolled in Medicaid and qualified to deliver SUD services
Denominator	N/A
Comparison Population	N/A
Measure Steward	CMS
Data Source	Provider enrollment; Claims
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	Measure specifications rely on Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0, **Metric #13: SUD Provider Availability**. The measure name in the evaluation design was *Number of providers enrolled in Medicaid and qualified to deliver SUD services*. This has been changed to *Number of providers enrolled in Medicaid and who deliver SUD services* to reflect that SUD providers were identified from the provider enrollment and claims data and represent those actually billing for SUD diagnosis and treatment.

Number of Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services (Measure 9)	
Numerator	The number of providers enrolled in Medicaid and qualified to deliver MAT for SUD services
Denominator	N/A
Comparison Population	N/A
Measure Steward	CMS
Data Source	Provider enrollment; Claims; Substance Abuse and Mental Health Services Administration (SAMSHA) survey

Number of Providers Enrolled in Medicaid and Who Deliver MAT for SUD Services (Measure 9)	
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	Measure specifications rely on Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0, **Metric #14: SUD Provider Availability - MAT**. The measure name in the evaluation design plan was *Number of providers enrolled in Medicaid and qualified to deliver MAT for SUD services*. This has been changed to *Number of providers enrolled in Medicaid and who deliver MAT for SUD services* to reflect that SUD providers were identified from the provider enrollment and claims data and represent those actually billing for SUD diagnosis and treatment. SAMHSA data was used to identify those approved for delivering MAT: • https://www.samhsa.gov/medication-assisted-treatment/find-treatment/treatment-practitioner-locator • https://dpt2.samhsa.gov/treatment/directory.aspx

Number of Beds Available in IMD Facilities Providing SUD Services (Measure 10)	
Numerator	The number of beds available in IMD facilities providing SUD services
Denominator	N/A
Comparison Population	N/A
Measure Steward	CMS
Data Source	Nebraska 1115 SUD Facility Tracker
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	Data was limited to facilities that are reported as Medicaid IMD facilities providing substance use services. County was assigned based on the provider practice/office address.

Number of Outpatient Facilities Offering Detoxification (Measure 11)	
Numerator	The number of facilities offering opioid-specific detoxification
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMHSA survey
Data Source	National Survey of Substance Abuse Treatment Services (N-SSATS)
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics

Number of Outpatient Facilities Offering Detoxification (Measure 11)	
Notes for measure calculation	**Table 6.5a "Type of care offered, by state or jurisdiction: Number"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the United States (US) Census' American Communities Survey.

Number of Facilities Offering Opioid-Specific Detoxification (Measure 12)	
Numerator	The number of facilities offering opioid-specific detoxification
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMSHA survey
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.23 "Facilities detoxifying clients, by substance and state or jurisdiction"** from the compiled annual reports will be used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Opioid Treatment Programs (OTPs) (Measure 13)	
Numerator	The number of facilities offering OTPs
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMHSA survey
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.31a "Type of care offered in facilities with OTPs, by state or jurisdiction"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Outpatient Facilities Offering OTPs (Measure 14)	
Numerator	The number of outpatient facilities offering OTPs
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMHSA survey

Outpatient Facilities Offering OTPs (Measure 14)	
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.31a "Type of care offered in facilities with OTPs, by state or jurisdiction"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Residential (Non-Hospital) Facilities Offering OTPs (Measure 15)	
Numerator	The number of residential (nonhospital) facilities offering OTPs
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMSHA survey
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.31a "Type of care offered in facilities with OTPs, by state or jurisdiction"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Medication-Assisted Opioid Therapy Provided at Facilities with OTPs (Measure 16)	
Numerator	The number of facilities with OTPs offering medication-assisted opioid therapy
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMSHA survey
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.30a "Medication-assisted opioid therapy provided at facilities with OTPs and other facilities, by state or jurisdiction"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Any Type of MAT (Measure 17)	
Numerator	The number of facilities offering any type of MAT
Denominator	The number of adult residents
Comparison Population	N/A
Measure Steward	SAMSHA survey
Data Source	N-SSATS
Frequency	Annual
Desired Direction	Higher is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	**Table 6.30a "Medication-assisted opioid therapy provided at facilities with OTPs and other facilities, by state or jurisdiction"** from the compiled annual reports was used to calculate this measure. Population estimates of the number of adult residents were obtained from the US Census' American Communities Survey.

Needing But Not Receiving Treatment at a Specialty Facility for Illicit Drug/SUD in the Past Year (Measure 18)	
Numerator	The number of unique respondents that needed treatment for illicit drug or alcohol use in the past year but did not receive illicit drug or alcohol treatment at a specialty facility.
Denominator	N/A
Comparison Population	N/A
Measure Steward	SAMHSA survey
Data Source	National Survey on Drug Use and Health (NSDUH)
Frequency	N/A
Desired Direction	Lower is better
Analytic Approach	Descriptive statistics
Notes for measure calculation	This measure was calculated using the following variable from the restricted-use data analysis system (R-DAS): • TXYNSPILAL: Respondent needed treatment for illicit drug or alcohol use in the past year but did not receive illicit drug or alcohol treatment at a specialty facility. Responses were restricted to the 19–64 age range using a recode of the age variable (DETALAGE).

The Percentage of Medicaid Beneficiaries with SUD Who Had an Ambulatory or Preventive Care Visit (Measure 19)	
Numerator	The number of unique beneficiaries with SUD diagnosis, and specifically those with opioid use disorder (OUD), who have a claim for an ambulatory or preventive care visit in the past 12 months
Denominator	The total number of beneficiaries aged 19–64 with SUD/OUD
Comparison Population	N/A
Measure Steward	National Committee for Quality Assurance (NCQA)
Data Source	Claims
Frequency	Annual

The Percentage of Medicaid Beneficiaries with SUD Who Had an Ambulatory or Preventive Care Visit (Measure 19)	
Desired Direction	Higher is better
Analytic Approach	Trend analysis
Notes for measure calculation	Measure specifications rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #32: Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries with SUD**.

Percentage of Beneficiaries Who Initiated Treatment Within 14 Days of a New SUD Diagnosis (Measure 20)	
Numerator	The number of beneficiaries with a claim for treatment within 14 days
Denominator	The total number of beneficiaries aged 19-64 with a new diagnosis of SUD
Comparison Population	N/A
Measure Steward	NCQA National Quality Forum (NQF) #0004
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Analytic Approach	ITS regression
Notes for measure calculation	Measure specifications rely on a modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #15: Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD)**. To make this a monthly measure, this measure was modified to keep every episode of new diagnosis of alcohol or other drug (AOD) abuse or dependence during the measurement year. Only episodes of AOD abuse and dependence diagnosis with a clear Negative Diagnosis History during the 60-day period prior to the episode date were kept. Members were counted in the denominator population based on the month of the episode date. Due to the specification for this measure, rates for the final month of the measurement period are artificially low and were excluded from the ITS analysis.

Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit (Measure 21)	
Numerator	The number of beneficiaries with two or more claims for SUD treatment within 34 days
Denominator	The total number of beneficiaries aged 19-64 with a new diagnosis of SUD
Comparison Population	N/A
Measure Steward	NCQA NQF #0004
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Analytic Approach	ITS regression

Percentage of Beneficiaries Who Initiated Treatment and Who Had Two or More Additional Services for SUD Within 34 Days of the Initiation Visit (Measure 21)	
Notes for measure calculation	Measure specifications rely on a modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #15: Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD)**. To make this a monthly measure, this measure will be modified to keep every episode of new diagnosis of AOD abuse or dependence during the measurement year. Only episodes of AOD abuse and dependence diagnosis with a clear Negative Diagnosis History during the 60-day period prior to the episode date will be kept. Members will be counted in the denominator population based on the month of the episode date. Due to the specification for this measure, rates for the final month of the measurement period are artificially low and were excluded from the ITS analysis.

Continuity of Pharmacotherapy for OUD (Measure 22)	
Numerator	The number of beneficiaries who have at least 180 days of continuous treatment
Denominator	The total number of beneficiaries aged 19-64 receiving MAT for OUD
Comparison Population	N/A
Measure Steward	University of Southern California (USC) NQF #3175
Data Source	Claims
Frequency	Monthly
Desired Direction	Higher is better
Analytic Approach	ITS regression
Notes for measure calculation	Measure specifications rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #22: Continuity of Pharmacotherapy for Opioid Use Disorder.**

Number of emergency department (ED) Visits for SUD (Measure 23)	
Numerator	The total number of claims for ED visits for SUD
Denominator	The total number of beneficiaries aged 19-64 Note: the denominator will include all beneficiaries aged 19-64 with an ED visit and without an ED visit (zero for the numerator).
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	Measure specifications rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #23: Emergency Department Utilization for SUD per 1,000 Medicaid Beneficiaries**.

30-day Readmission (Measure 24)	
Numerator	The number of acute inpatient stays among beneficiaries with SUD followed by an acute readmission within 30 days
Denominator	The number of acute inpatient stays among beneficiaries with SUD
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Desired Direction	Lower is better
Frequency	Monthly
Analytic Approach	ITS regression
Notes for measure calculation	Measure specifications rely on a modified *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0,* **Metric #25: Readmissions Among Beneficiaries with SUD**. Modifications were made to facilitate calculating a monthly metric. Due to the specifications for this measure, rates for the final month of the measurement period are artificially low and were excluded from the ITS analysis.

Rate of Overdose Deaths, Overall and Due to Opioids (Measure 25)	
Numerator	The total number of overdose deaths The total number of deaths due to opioid overdose
Denominator	The total adult population of the state
Comparison Population	N/A
Measure Steward	N/A
Data Source	Centers for Disease Control and Prevention (CDC) Wide Ranging Online Data for Epidemiologic Research (WONDER)
Frequency	Annual
Desired Direction	Lower is better
Analytic Approach	Descriptive statistics

Rate of Overdose Deaths, Overall and Due to Opioids (Measure 25)	
Notes for measure calculation	Consistent with CDC methodology, drug overdose deaths will be identified using the International Statistical Classification of Diseases and Related Health Problems (ICD)-10 underlying cause-of-death codes: • X40-X44: accidental poisoning by drugs • X60-X64: intentional; self-poisoning by drugs • X85: assault by drug poisoning • Y10-Y14: drug poisoning of undetermined intent Opioid overdose deaths will be identified by the presence of any of the following multiple cause of death (MCOD) codes: • T40.0: opium • T40.1: heroin • T40.2: natural and semisynthetic opioids, including drugs such as oxycodone, hydrocodone, and morphine • T40.3: methadone • T40.4: synthetic opioids, including drugs such as fentanyl and tramadol and excluding methadone • T40.6: other and unspecified narcotics This measure was compared to rates of overall overdose deaths and opioid-specific deaths nationwide. Health Services Advisory Group, Inc. (HSAG) additionally calculated the proportion of all overdose deaths attributable to opioids by taking the number of deaths due to opioid overdose divided by all overdose deaths.

Number of Inpatient Stays for SUD (Measure 26)	
Numerator	Among beneficiaries in the denominator, the number of beneficiaries aged 19-64 with a claim for an inpatient stay for SUD
Denominator	The total number of beneficiaries aged 19-64 Note: the denominator will include all beneficiaries aged 19-64 with an inpatient stay and without an inpatient stay (zero for the numerator).
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	Measure specifications rely on *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #24: Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries.**

Number of Days of Inpatient Hospitalization for SUD (Measure 27)	
Numerator	The total number of days of inpatient treatment for SUD for beneficiaries aged 19-64
Denominator	The total number of beneficiaries aged 19-64 Note: the denominator will include all beneficiaries aged 19-64 with an inpatient stay and without an inpatient stay (zero for the numerator).
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Measurement Period	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	The numerator for this measure was adapted from *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #24: Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries**.

Average Length of Stay of Inpatient Hospitalization for SUD (Measure 28)	
Numerator	The total number of days of inpatient treatment for SUD for beneficiaries aged 19-64
Denominator	The total number of inpatient hospitalizations for SUD
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Measurement Period	Monthly
Desired Direction	No desired direction
Analytic Approach	ITS regression
Notes for measure calculation	The numerator for this measure came from the numerator of Measure 27, as described above. The denominator for this measure was calculated following the numerator instructions from *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #24: Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries**.

Number of Inpatient Stays for Any Cause (Measure 29)	
Numerator	The number of all-cause inpatient stays among beneficiaries 19-64 with SUD For the numerator of this measure, HSAG **utilized CMS Health Home specifications for Inpatient Utilization (IU-HH)** in order to focus on inpatient utilization within hospital settings. To facilitate calculation of a monthly measure, the inpatient stay was assigned to the month in which the stay began (admission date).
Denominator	The total number of beneficiaries aged 19-64 with SUD. The denominator for this measure was calculated according to *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly)
Comparison Population	N/A
Measure Steward	NCQA
Data Source	Claims
Measurement Period	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	The numerator represents a change from the evaluation design plan and is based on discussion and measure review with the Department of Health and Human Services (DHHS). The numerator specified in the design plan was "number of beneficiaries ages 19-64 with a claim for an inpatient stay for SUD", which contradicted the measure name indicating inpatient stays for any cause.

Number of Days of Inpatient Stays for Any Cause (Measure 30)	
Numerator	The total number of days of inpatient treatment for any cause among beneficiaries aged 19-64 with SUD The numerator was calculated as follows: • Step 1. Identify beneficiaries with SUD according to *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly) • Step 2. Among beneficiaries identified in step 1, identify inpatient stays for any cause according to a modified version of the CMS Health Home specifications for Inpatient Utilization (IU-HH). To facilitate a monthly measure, inpatient stays were counted in the month of the admission date.
Denominator	The total number of beneficiaries aged 19-64 with SUD
Comparison Population	N/A
Measure Steward	NCQA
Measurement Period	Monthly
Data Source	Claims
Desired Direction	Lower is better
Analytic Approach	ITS regression

Number of Days of Inpatient Stays for Any Cause (Measure 30)	
Notes for measure calculation	The numerator represents a change from the evaluation design and is based on discussion and measure review with DHHS. The numerator specified in the evaluation design was "number of days of inpatient treatment for SUD for beneficiaries aged 19-64", which contradicted the measure name indicating number of days of inpatient stays for any cause. The denominator was calculated according to *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).

Average Length of Stay of Inpatient Hospitalization for Any Cause (Measure 31)	
Numerator	The total number of days of inpatient treatment for any cause among beneficiaries aged 19-64 with SUD The numerator for this measure came from the numerator of Measure 30. To facilitate calculation of a monthly measure, the inpatient stay was assigned to the month in which the stay began (admission date). The length of stay was calculated based on the number of days between the admission date and discharge date. It is possible that the length of stay exceeds the number of days in a particular month. For example, if an inpatient stay had an admission date of Jan 1 and a discharge date of February 15, the stay would be attributed to January and have a length of stay of 46 days, even though January has 31 days.
Denominator	The total number of inpatient stays for any cause among beneficiaries aged 19-64 with SUD. The denominator for this measure came from the numerator of Measure 29. To facilitate calculation of a monthly measure, the inpatient stay was assigned to the month in which the stay began (admission date).
Comparison Population	N/A
Measure Steward	NCQA
Data Source	Claims
Measurement Period	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	The numerator and denominator shown here represents a change from the evaluation design and is based on discussions and measure review with DHHS. The original numerator and denominator specified in the evaluation design was specific to inpatient hospitalization for SUD and was the same as the prior measure. HSAG has revised the numerator and denominator to allow for calculation of the average LOS for any cause among beneficiaries with SUD.

Number of ED Visits for Any Cause (Measure 32)	
Numerator	The total number of ED visits for any cause among beneficiaries aged 19-64 with SUD HSAG identified ED visits according to **CMS Health Home specifications for Ambulatory Care: Emergency Department Visits (AMB-HH):** To facilitate calculation of a monthly measure, the ED visit was assigned to the month of the date of service.
Denominator	The total number of beneficiaries aged 19-64 with SUD The denominator was calculated according to *Medicaid Section 1115 SUD Demonstrations: Technical Specifications for Monitoring Metrics, version 4.0*, **Metric #3: Medicaid Beneficiaries with SUD diagnosis** (monthly).
Comparison Population	N/A
Measure Steward	NCQA
Data Source	Claims
Measurement Period	Monthly
Desired Direction	Lower is better
Analytic Approach	ITS regression
Notes for measure calculation	This numerator represents a change from the evaluation design and is based on discussion and measure review with DHHS. The numerator specified in the evaluation design was "total number of claims for ED visits for SUD for beneficiaries aged 19-64"., which contradicted the measure name indicating ED visits for any cause.

PMPM Cost for SUD Treatment (Measure 33)	
Numerator	Total cost of all claims stratified by SUD-IMD, SUD-Other, Non-SUD for members flagged with an SUD diagnosis, by month Members flagged with an SUD diagnosis are those enrolled in the measurement period and who receive MAT or have qualifying facility, provider, or pharmacy claims with an SUD diagnosis and an SUD-related treatment service during the measurement period. • Step 1. Identify claims for MAT, defined in one of the following the Healthcare Effectiveness Data and Information Set (HEDIS®)[0-1] MY 2020 IET Value Sets or Medications Lists: – AOD Medication Treatment Value Set – Alcohol Use Disorder Treatment Medication Lists – Opioid Use Disorder Treatment Medication Lists • Step 2. Identify claims with a diagnosis code (any diagnosis on the claim) listed under one of the following HEDIS MY 2020 Value Sets: – Alcohol Abuse and Dependence – Opioid Abuse and Dependence – Other Drug Abuse and Dependence Members are considered a part of the SUD cost analysis group beginning the first month in which they have a relevant diagnosis or treatment claim for SUD, and up to 11 additional months that did not include relevant claims, if the beneficiary remained enrolled in Medicaid. If a member has additional claims with a relevant diagnosis or treatment code, their inclusion in the SUD cost analysis group is extended to include up to 11 additional months following the subsequent claim, if the member remained enrolled in Medicaid. SUD-IMD costs were costs incurred from claims with an IMD provider. SUD-Other costs are all other SUD costs from claims for a non-IMD provider. HSAG used the Nebraska 1115 SUD Facility Tracker list to flag IMD providers. Non-SUD costs included all other costs from non-SUD claims for the member.
Denominator	The total number of members among beneficiaries in the SUD cost analysis group for the corresponding month
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Desired Direction	Reduce or maintain
Frequency	Monthly
Analytic Approach	ITS regression
Notes for measure calculation	Methodology for assessing costs follows *CMS Serious Mental Illness (SMI)/Serious Emotional Disturbance (SED) Evaluation Design Guidance: Appendix C*, https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-sed-sud-cost-appendix-c.pdf; last accessed January 5, 2023.

0-1 HEDIS® is a registered trademark of the NCQA.

PMPM Cost (Measure 34)	
Numerator	The sum of total paid claim amounts for all inpatient, long-term care, outpatient, professional, and pharmacy categories of service for members flagged with an SUD diagnosis, for each month. Members flagged with an SUD diagnosis are those enrolled in the measurement period and who receive MAT or have qualifying facility, provider, or pharmacy claims with an SUD diagnosis and an SUD-related treatment service during the measurement period. • Step 1. Identify claims for MAT, defined in one of the following HEDIS MY 2020 IET Value Sets or Medications Lists: – AOD Medication Treatment Value Set – Alcohol Use Disorder Treatment Medication Lists – Opioid Use Disorder Treatment Medication Lists • Step 2. Identify claims with a diagnosis code (any diagnosis on the claim) listed under one of the following HEDIS MY 2020 Value Sets: – Alcohol Abuse and Dependence – Opioid Abuse and Dependence – Other Drug Abuse and Dependence Members are considered a part of the SUD cost analysis group beginning the first month in which they have a relevant diagnosis or treatment claim for either SUD or BH, and up to 11 additional months that did not include relevant claims, if the beneficiary remained enrolled in Medicaid. If a member has additional claims with a relevant diagnosis or treatment code, their inclusion in the SUD cost analysis group is extended to include up to 11 additional months following the subsequent claim, if the member remained enrolled in Medicaid.
Denominator	The total number of members among beneficiaries in the SUD cost analysis group for the corresponding month
Comparison Population	N/A
Measure Steward	CMS
Data Source	Claims
Frequency	Monthly
Desired Direction	Reduce or maintain
Analytic Approach	Descriptive statistics; ITS regression
Notes for measure calculation	Methodology for assessing costs follows *CMS SMI/SED Evaluation Design Guidance: Appendix C*, https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-sed-sud-cost-appendix-c.pdf; last accessed January 5, 2023.

Appendix D. Expanded Qualitative Summary

Health Services Advisory Group, Inc. (HSAG) is conducting an independent evaluation of the Nebraska Department of Health and Human Services (DHHS) Section 1115 Substance Use Disorder (SUD) Demonstration Waiver (the Waiver) as a required element of the Centers for Medicare & Medicaid Services (CMS) Special Terms and Conditions (STCs). The demonstration seeks to enable the State to provide a full continuum of care for Nebraskan beneficiaries with addiction by improving access to evidence-based SUD treatment and improving the quality of available SUD treatment.[D-1]

As a part of its evaluation, HSAG conducted semi-structured interviews with DHHS staff members, providers, and managed care organizations (MCOs) to collect qualitative information regarding the impacts of the Waiver between October 2021 and January 2022. The interviews collected data on perceptions and experiences during the initial stages of the Waiver's implementation regarding:

- Experiences with access, care coordination and transitions, and quality of care for SUD treatment recipients.
- Perceptions of barriers and drivers of success associated with the implementation of the SUD demonstration.
- Unintended consequences encountered during the implementation of the SUD demonstration.
- Impacts of the coronavirus disease 2019 (COVID-19) public health emergency (PHE) on the implementation of the SUD demonstration.

HSAG developed flexible interview protocols using open-ended questions to maximize diversity and richness of responses and ensure a holistic understanding of the subjects' experience. The responses from the interviews are aggregated and summarized, organized according to the interview protocols.

Key Informants

Healthcare providers, State administrators, and MCO staff were approached for inclusion in the key informant interviews. Table D-1 displays the key informants interviewed.

[D-1] Centers for Medicare & Medicaid Services. CMS SUD Evaluation Design Approval. Available at: https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/ne-sud-demo-appvd-sud-eval-dsgn-20200828.pdf. Accessed on: Mar. 8, 2023.

Table D-1—Key Informants

Organization Type	Organization
State Administrators	Administrators I-II Deputy Director of Behavioral Health Deputy Director for Compliance Deputy Director for Project and Performance Management Deputy Director of Finance and Program Integrity Deputy Director of Population Health Director, Division of Medicaid and Long-Term Care Medical Director Pharmacist Program Specialist
MCOs	Healthy Blue Nebraska Total Care United Healthcare
Providers	BAART Community HealthCare Centerpointe, Inc. Charles Drew Health Center Human Services, Inc. Nebraska Urban Indian Health Coalition Nova Treatment Community, Inc. Platte Valley Counseling Santa Monica House The Bridge Behavioral Health

Major Themes

Several major themes emerged from the key informant interviews:

- There was broad-based support during the development and implementation of the Waiver and its goals, along with the belief that the Waiver expanded access to care and the continuum of SUD treatment in Nebraska.
- DHHS was successful in its active and open communication with MCOs and providers, particularly in its willingness to elicit and incorporate stakeholder feedback during the development phases of the Waiver.
- The COVID-19 PHE had significant impacts on MCOs, State administrators, and providers' experience with the Waiver as they focused on the health crisis and prioritized the immediate health and safety needs of individuals over other concerns.
- While access to services was greatly encouraged by the expanded coverage of services, rural and frontier areas may not have the population base to attract providers for some services, even if they are covered. As a result, gaps in access to and availability of services existed across the varying geographic regions of Nebraska.

- Understanding and executing new service definitions continued to be an ongoing process and a learning experience for stakeholders. All stakeholders dedicated substantial resources to achieve a common understanding of these definitions.

The following sections provide further detail about the major themes that were mentioned during the key informant interviews, divided into successes and concerns by type of informant.

Successes

All informants were asked to describe their perception of the successes and drivers of success regarding the development and implementation of the Waiver.

State Administrators

State administrators highlighted improvements in DHHS' communication with MCOs as a result of the Waiver. DHHS created opportunities for MCOs and providers to give feedback on their perspectives throughout the development and implementation of the Waiver. DHHS sent MCOs outreach questions and additional follow-up questions when issues were identified. Additionally, prior to publishing reports detailing the number of providers providing each level of care, DHHS provided a 60-day notice to allow MCOs to flag issues before dissemination of the report. State administrators applauded the continued open communication between DHHS and MCOs to resolve issues.

Similarly, State administrators sought clear communication with providers through purposeful cross-divisional educational meetings with subject matter experts to communicate enrollment and screening criteria. State administrators strived to ensure providers had the resources to understand requirements and service definitions. One State administrator shared that DHHS met with providers in the community for roundtable discussions to hear feedback from providers and share DHHS' goals and visions. Additionally, a provider association quarterly meeting was held to hear issues directly from providers. One State administrator commented that this early feedback from providers and clinicians allowed them to avoid major challenges rolling out the prevention strategy.

State administrators facilitated communication regarding differences in service definitions and program methods. One State administrator created a document detailing these differences in service definitions for Medicaid and behavioral health State statutes to support Nebraska's consistency across different divisions within DHHS. DHHS' Medicaid and Long-Term Care (MLTC) division and the Division of Behavioral Health (DBH) met frequently to discuss aligning their programs and related initiatives to decrease inefficiencies. Both divisions sought to methodically build the SUD continuum of care. They worked to define service definitions; consulting providers as needed as they developed the model.

State administrators noted the positive influence of Public Consulting Group (PCG), an external project manager hired to aid in the implementation of Waiver milestones. PCG mediated conversations and work between various organizations and divisions involved in the Waiver, leading conversations to productive ends. PCG provided a coordinated approach to governance, new services, managed care reporting, implementation milestones readiness, and stakeholder feedback elicitation. PCG researched out-of-state SUD initiatives and leveraged its own experience and expertise with Section 1115 Demonstration Waivers to help DHHS successfully develop and implement its demonstration.

State administrators commented on the changes in the continuum of care the State provided clearly as a result of the Waiver and the Medicaid coverage of opioid treatment programs (OTPs) and medication-assisted treatment (MAT). Examples provided by State administrators included the ability to:

- Cover stays in Institutions for Mental Disease (IMDs) for the Medicaid expansion population.
- Administer drugs in new settings for different durations.
- Offer "mid-level" services to patients who need more assistance than outpatient (OP) providers can provide, but do not require emergency department (ED) or inpatient (IP) treatment.
- Improve care coordination, including between providers and MCOs.
- Expand facilities by providing reimbursement for services through the Waiver.

State administrators commented on the increase in the number of beneficiaries the State was able to serve due to the Medicaid expansion. Patients who may once have been out-of-pocket payers were treated under Medicaid. According to State informants, MCOs expanded the number of members they serve due to Medicaid expansion.

Additional drivers of success mentioned by single State administrators are listed below:

- DHHS partnered with University of Nebraska Medical Center (UNMC) to run Project Extension for Community Healthcare Outcomes (ECHO) to help prescribe MAT and create opportunities to support training for psychiatry residents. DHHS offered free training continuing education units (CEUs) focused on SUD conditions.
- Early in the Waiver's development, Medicare published the Current Procedural Terminology (CPT) codes for services that proved to be helpful in the development process.
- Useful discussions were spurred by the Waiver about behavioral health services and the supports available.
  - State administrators started a broad program to review all the behavioral health regulations in Nebraska and initiate updates.

MCOs

MCOs highlighted DHHS' collaborative approach in developing the Waiver, which began with the State's early engagement with MCOs and providers in the development process. According to MCOs, DHHS worked with MCOs and providers to review and refine service definitions for new levels of care, and frequently solicited feedback. DHHS responded to recommendations from stakeholders to clarify language for providers. MCOs shared that DHHS remained clear and consistent in its communication and messaging, ensuring the MCOs were unified in their communication and messaging to providers. To further increase unification, DHHS hosted provider trainings on the Waiver, preventing MCOs from hosting individual disjointed sessions. Additionally, the State provided content on new credentialling and licensing requirements to aid providers in understanding the credentials and how to use them in their practice. The State's early collaboration with MCOs and providers facilitated the delivery of American Society of Addiction Medicine (ASAM) Level 3.7 services in line with the service definitions and aided existing facilities in updating their operations to deliver ASAM Level 3.7 as a covered service. DHHS's external contractor, PCG, aided in the execution of certain aspects of the Waiver, including identifying and meeting milestones and starting up new services, by providing project management assistance. According to one MCO, PCG staff kept the Waiver implementation on task while remaining collaborative and open to feedback.

Informants highlighted that DHHS successfully incorporated the Waiver into the State's larger opioid strategy. MCOs noted that the State made targeted efforts to increase MCOs' and providers' awareness and knowledge of

opioid issues in Nebraska, through providing education and removing barriers to enroll new providers in SUD services. Examples of State efforts noted by MCOs were Project ECHO and DBH's opioid strategies. As a result of their work with the Waiver's development and the implementation of services, MCOs cited an increased understanding of Nebraska's opioid environment and crisis. The Waiver prompted one MCO to consider the future direction of the organization's opioid strategy and identify any barriers in place.

MCOs shared that the Waiver provided an opportunity to build on SUD provider capacity within the State. The Waiver expanded member access to services by covering OTP, MAT, and ASAM Level 3.7 services under Medicaid. OTP providers who were previously not enrolled in Medicaid were able to provide covered services within the network. MCOs worked with OTP and residential providers to expand ASAM Level 3.7 services and recruited providers who did not previously deliver SUD services to add services covered by the Waiver to their portfolio. One MCO highlighted that the Waiver did not negatively impact the availability of or access to pre-existing SUD services or ASAM levels of care, as no providers chose to remove any pre-existing ASAM levels to provide ASAM Level 3.7 services.

Internally, MCOs experienced success in implementation, with one MCO informant calling the internal implementation seamless. The MCO's provider relations and contracting teams were proactive as they laid the groundwork for the Waiver and new services with contracted providers early in the development phases. Provider relations and contracting teams continued to work with providers through implementation to aid in understanding Medicaid billing and administrative processes.

All MCOs discussed their robust care coordination and case management systems but indicated that the Waiver did not result in changes to their processes. MCOs noted that their care management policies remained unchanged for members regardless of the types of services they received, and that high quality care coordination and case management was the status quo. Specific care coordination successes discussed by the MCOs included:

- Resources and staff dedicated to case management.
- Daily facility reports used to identify members with difficulties or needs.
- Small populations that resulted in close relationships between the MCOs and providers.
- Comprehensive referral systems.
  - Both providers and members made referrals.
  - Multiple avenues of referrals were available, including via phone and through secure portals.
  - Education on care coordination and case management provided to provider networks to ensure complete knowledge on how to make referrals.

Providers

Many providers agreed that having SUD treatment services covered under Medicaid increased access to care, strengthened the continuum of care available, and enabled more patients to utilize available treatment. Patients received services they did not have access to before the Waiver and providers no longer turned away Medicaid patients from needed care due to services not being covered. Providers noted that patients experienced relief knowing they would not be billed for receiving necessary care. In addition, the Waiver decreased waitlists for treatment. Prior to the Waiver, one provider noted a finite number of state-funded allotments for those with Medicaid, resulting in delayed treatment as Medicaid members waited for an opening. The direct coverage of services under Medicaid allowed more patients to avoid this waitlist and to be seen without delay. According to providers, the reduced delays in receiving care increased positive engagement with the patient and success in treatment. One provider noted that access did not expand at the provider's organization because the Waiver did

not have a direct effect on expanding Medicaid eligibility. Others highlighted they were still in the process of expansion; one provider shared plans to provide intensive outpatient (IOP) services in the near future while a second shared anticipating additional feedback on the Waiver after completing the early stages of implementation.

Provider informants commented on positive interactions with DHHS throughout the development and implementation of the Waiver. According to providers, DHHS supported providers and their needs. The State collaborated with providers to develop service definitions and remained open to suggestions when providers offered feedback and suggestions. The State responded to questions from providers and delivered timely responses that allowed providers to implement Waiver services effectively.

While many providers shared changes they experienced due to the Waiver, several others noted they did not notice any changes, positive or negative. One provider noted that the only difference in their provider's day-to-day practice was the funding source for certain patients' care. A second provider did not notice changes in approvals or denials for SUD treatment due to the Waiver and did not see an impact on the amount of treatment that was being provided.

Additional drivers of success mentioned by single providers are listed below:

- Increased personal knowledge and savviness through advocating for the appropriate levels of care for patients.
- An overall smooth billing experience, notably in regard to prior authorizations.
- Increased support for minority patients in their treatment processes through engagement with 12-step programs and through building relationships with community-based providers and utilizing care managers.
- Provider capacity growth through new hires spurred by the increase in the number of patients entering OP care.
- Implementation of comprehensive treatment and prevention strategies.
- Improved care coordination and transitions between levels of care.
- Updating credentialing processes so only designated SUD and mental health providers can bill SUD codes.

Challenges

All informants were asked to describe barriers or difficulties they encountered related to the implementation of the Waiver and the steps taken to address them.

State Administrators

State administrators commonly discussed difficulty ensuring that service and provider types were properly defined. The development of usable definitions through consultation with providers and clinics took time and required DHHS staff to balance the use of MLTC's and DBH's differing clinical terms and service definitions. One informant noted that the provider types were not initially defined, causing confusion among the MCOs. To remedy this issue, DHHS staff clarified existing provider types and added new provider types to ensure each provider was documented with the appropriate abilities. After the service types were defined, State administrators provided education to providers on the additions and clarifications.

Informants noted difficulties with implementation of the definitions and criteria from ASAM, partially due to challenges with providers meeting ASAM criteria. Multiple State administrators commented that despite the Waiver, there is only one ASAM Level 3.7 medically monitored inpatient withdrawal (MMIW) provider in Nebraska. Examples of additional complexities State administrators discussed around ASAM included the following:

- ASAM standards did not align with Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and Commission on Accreditation of Rehabilitation Facilities (CARF) accreditation.
- The complexities and differences in service definitions for OTP and ASAM Level 3.7 services were anticipated to continue to bring challenges.
- MCOs struggled to report providers in the appropriate category for the level of service due to the complexity of ASAM criteria.

Nebraska's diverse urban and rural environments proved to be a challenge in the implementation of the Waiver. Informants commented on difficulties experienced by beneficiaries accessing providers in rural and frontier areas, which resulted in increased MCO efforts to better identify rural communities and independent pharmacists in those areas. Providers used telehealth to deliver care in rural areas; however, there was often an additional barrier presented by poor Internet access in those areas. One informant expressed concern about the distribution of knowledge of the Waiver in rural areas, commenting that beneficiaries were unable to utilize services they did not know existed.

During the beginning of implementation, DHHS noted gaps in the continuum of care. One informant noted there was a lag between a patient's arrival for treatment and receipt of treatment due to the time required to complete intake paperwork. A second informant observed difficulty alerting and educating providers about new services. A third State administrator commented on the desire to see the monitoring process of high utilizers of SUD treatment services to be further strengthened and expanded. For example, case managers often spent time locating placements for patients whereas, with strengthened resources, they could be more focused on patient care.

Many challenges stemmed from having separate payers and rules for each payer. One informant noted often having to clarify the compensation the Waiver provided to ensure providers were not expecting uncovered services to be paid. DHHS implemented prior authorizations to prevent abuse of the services and limit overspending. However, one State administrator noted that this gave providers the impression that MCOs believed they knew what was better for the patients than the providers knew. If a provider was denied preauthorization, the provider communicated with the plan to gain clarity on expectations. Similarly, plans approached providers and offered resources. Additionally, DBH paid for OTP services prior to knowledge of the official OTP service start date due to a miscommunication. This resulted in one OTP provider dealing with reimbursement and reprocessing claims.

Other challenges discussed included the following:

- DHHS had no prior Section 1115 Demonstration Waiver experience; therefore, much time was devoted to intensive research and dialogue between DHHS and CMS to create an internal structure from scratch.
- Facilities with multiple provider types did not always accept individuals with an SUD because the facility did not meet the Waiver's MMIW criteria.
- Providers felt uncomfortable prescribing methadone and lacked experience in methadone treatment.
- Having no clear pre-existing managed care model resulted in DHHS working with CMS to create a managed care model.

- Programs which utilized community health workers (CHWs) needed to ensure they understood the level of care offered by providers.
- Some providers resisted using an electronic oversight system.
- Issues in the relationship between DHHS, plans, and providers resulted in the need for localized outreach.

MCOs

A chief concern among MCOs was the lack of demand for opioid use disorder (OUD) treatment services in Nebraska. According to the MCOs, Nebraska had not experienced the large impact of the opioid crisis compared to other states across the country. The lack of demand for opioid services resulted in a lack of willingness among providers to invest and expand their workforce and capacity to serve OUD members or include the new OTP and MMIW services covered by the Waiver. Providers were hesitant to deliver opioid services if they would not at least break even due to low demand. Use of alcohol and methamphetamines was more prevalent; therefore, more providers were equipped to treat these issues compared to opioids. MCOs actively attempted to recruit new providers to deliver Waiver services to increase the number of providers available. MCOs targeted known SUD providers to cover the higher levels of ASAM that were newly reimbursable through the Waiver, as well as providers new to both SUD treatment and Medicaid. One MCO noted not believing that beneficiaries lacked access to SUD treatment services as a result of the unavailability of providers interested in SUD treatment services due to the low demand for the services. A second MCO remarked that if demand were to grow and return on investment were to increase, there would be no barriers to growing provider capacity.

Additional challenges noted by single MCO informants were as follows:

- Difficulties enrolling new providers into Medicaid to provide Waiver services. New providers lacked an understanding of basic Medicaid administrative processes which delayed their onboarding and operationalization of services.
  - The MCO's provider relations and contracting team worked with new providers throughout the onboarding process to improve the experience.
- Credentialing providers to deliver ASAM Level 3.7 services.
  - A considerable amount of time was spent assisting providers in understanding new services, including ASAM Level 3.7, and what was required to receive the proper credentials to provide those services.
  - Providers struggled with the IP accreditation criteria associated with ASAM Level 3.7.
  - An MCO experienced backlogs in credentialling providers.
- Members needing to travel long distances to receive services in western Nebraska due to most providers practicing on the eastern side of the State.
- Medicaid expansion increasing the proportion of adult members with an SUD in the member population simultaneous to the Waiver roll out.
- Administrative barriers to becoming a prescriber of MAT for opioids. One MCO noted that the Drug Enforcement Administration (DEA) reduced these hurdles; however, they still existed.
  - Administrative barriers became a cost to the provider and employers, creating resistance from both providers and health systems to expand into new service areas.

Providers

Provider informants noted frustration with individual MCOs' unique billing, credentialing, and authorization processes. Each MCO followed unique practices which added an administrative burden for providers as they navigated different systems. Providers expressed the desire for uniform processes across all MCOs to reduce learning curves and increase utility for providers. Similarly, one provider cited frustration with the different standards needed to allow patients to receive care such as Medicaid versus another funding source, like DBH.

Medicaid billing took time and energy from providers as they managed initial billing, denials, and appeals for the first time. Providers experienced a learning curve to understand the documents and credentialing required to provide services under Medicaid. One provider stated that the Medicare codes used for Medicaid and Waiver services were not always an exact fit. Providers discussed delays or confusion in receiving payments, which placed increased stress on providers and their organizations. One provider shared that 50 percent of the provider's income was in accounts receivable for Medicaid at the time of the interview. In addition, providers discussed Medicaid credentialing challenges including the struggle to understand the credentialing requirements and nuances. One provider acknowledged that larger organizations with dedicated staff working with MCOs may have fewer struggles than organizations with a small staff.

Providers noted concerns about reauthorizations disrupting appropriate treatment. Providers shared that Medicaid often did not reapprove patients to remain in the appropriate level of care if the patient did not appear to make progress according to MCOs' definitions. MCOs did not take transition time or the patient's personal situations into account, such as a criminal background or mental health issues, which might slow individuals' progress in their treatment program. As a result, patients were transitioned to lower levels of care against the recommendation of their providers. Providers believed this contributed to patient recidivism. One provider noted that frequent reauthorizations were not required under the former region funding structure.

Providers highlighted difficulties contacting support at MCOs, including the need to utilize the United States Postal Service for mailings, send multiple emails, and place unanswered phone calls. MCOs' slow responses delayed provider registration to deliver services covered by Medicaid. One provider noted that once contact was made with support staff, help in resolving issues was successfully attained. In addition to providers, patients faced difficulties contacting MCOs to receive aid with their challenges in applying for Medicaid. Issues included difficulty reaching support telephonically and the inability to download key application forms without Internet access.

Informants cited Nebraska's rural geography, specifically on the western side of the State, as a barrier to success and a driver of gaps in care. Small rural communities did not have SUD providers available to deliver services. One informant shared having served patients who would benefit from MAT; however, MAT could not be prescribed because there was no overseeing physician in the patient's area. Patients drove long distances to receive care that may not be the appropriate ASAM level simply because no other options were available. A provider shared that patients traveled long distances from western Nebraska to reach detoxification centers that accepted Medicaid. Informants shared that in some cases, treatment services in Kansas and Colorado were the closest options for patients in western Nebraska; however, these states would not accept Nebraska Medicaid to treat SUD. Differences in access existed even amongst urban areas of varying sizes. One provider highlighted that patients could find recovery housing to "step down into" in the largest city, Omaha, but could not find the same resources in the second largest city, Lincoln.

Workforce shortages created difficulties in maximizing providers' ability to serve patients. One provider expanded its bed count two years ago but continued to experience a waitlist due to a lack of providers to deliver

care. Another provider was forced to pull staff from other departments to aid in providing patient care. Turnover in administrative staff at this provider's organization forced new staff to team themselves the organization's and Medicaid's administrative processes. Working with Medicaid became a burden to a third provider already dealing with low staffing levels.

Additional challenges noted by single providers included the following:

- Challenges working with new service definitions created by State administrators with no clinical experience.
  - Language and service definitions had different meanings in different manuals or locations.
- Difficulty delivering high-quality treatment for dual disorders due to silos of SUD and behavioral healthcare.
  - Certain SUD step-downs would not accept patients with mental health issues as they only treated SUD.
- Significant dental needs of SUD patients who were untreated due to a lack of dentists accepting Medicaid.
- Limited ability to refer patients to other providers as they could only refer Medicaid patients to Medicaid providers.
- Difficulty managing the receipt of payments from MCOs due to varying payment methods.
- Lack of training from MCOs on the Waiver roll out.
- Lack of responses to provider questions.
- Lack of a stepdown level below ASAM Level 3.5 that resulted in patients having no appropriate level of care to enter.
- Limited ability to receive regional funding streams due to an increase in patients receiving Medicaid coverage.

COVID-19 PHE

State Administrators

Several State administrator informants noted challenges delivering care due to the COVID-19 PHE, with many highlighting the transition of delivery of care from in-person to telehealth. The State allowed providers to complete appointments with patients via telehealth that would traditionally be delivered in-person. According to State administrators, the addition of telehealth worked well for providers and patients in rural areas of the State. One State administrator shared that communication between providers and patients expanded as more individuals accessed teleconferencing platforms, such as Zoom. Another State administrator noted that the Waiver did not use the term "telehealth" and instead referred to the service delivery method as "clinical services at a distance" due to the existence of the more holistic "remote patient monitoring" that was included in the Waiver.

State administrators commented on the fluctuation of services due to the PHE. Initially, service utilization decreased due to fewer patients seeking SUD and behavioral health services. Social distancing made the delivery of and access to OTP and MAT services difficult and more complex. However, one State administrator commented that the patient and provider capacities had returned to pre-PHE levels.

Multiple State administrators discussed the importance of effective and consistent communication strategies at the height of the COVID-19 PHE. Communication between DHHS, pharmacies, and providers across the State increased, resulting in a strengthened relationship amongst the entities.

Additional comments regarding the COVID-19 PHE highlighted by single State administrators included:

- Workforce changes, specifically a decrease in available nurses.
- Difficulties assessing the demonstration productivity due to drastic changes in the population after Medicaid expansion and use of services during the COVID-19 PHE.
- Delayed access to OTP due to the COVID-19 PHE.

MCOs

MCOs noted successes in working through the COVID-19 PHE. Two MCOs highlighted that COVID-19 did not significantly impact the rollout of Waiver services. They believed that if the Waiver's services were implemented sooner, the impact of COVID-19 would have been more obvious. Additional successes noted by one or more MCOs were as follows:

- Opioid problems did not increase at the same rate as alcohol problems during the PHE.
- A non-contracted provider who delivered OTP services offered to provide presentations for other providers across the State on delivering SUD treatment via telehealth.
- Behavioral health providers embraced telehealth earlier than other specialties.
- Providers were creative in choosing the environments where they delivered care. Providers saw members in parks, via telehealth, or inside the members' homes.
- Telehealth was a useful tool for the delivery of care.
  - The State published provider bulletins with clear guidelines on using telehealth to deliver services.

Concerns due to COVID-19 highlighted by MCOs included the following:

- General delays in administrative processes.
- Members received delayed services.
  - One MCO noted that this impact was not unique to the Waiver's services and was seen across specialties and service types.
  - One MCO shared that during the shelter in place orders, members were not leaving ASAM Level 3.5 residential and stepping down to lower levels of care. As a result, new members were unable to enter ASAM Level 3.5 residential services. The MCO noted that this issue had improved by the time of the interview in November 2021.
- Widespread substance abuse issues may be undetected due to COVID-19-related barriers to receiving care.
- Staffing shortages due to illness and mental health burdens.
  - One MCO shared that a provider agency experienced one third of its staff being ill at one time, which impacted the ability to deliver services.
- Substance abuse and addiction rates increased in working-class areas heavily impacted by workplace closures.

Providers

Several provider informants noted workforce struggles as a result of the COVID-19 PHE. Providers lost employees during the PHE and struggled to find new hires. One provider shared that finding nurses and therapists became especially difficult as wages increased to levels difficult to match due to the organization's wage cap. As a result, staff left the organization to enter higher-paying fields. Additionally, staffing levels suffered from employees being absent due to illness. Remaining employees took on additional duties to keep organizations running. Limited staffing increased difficulties in maintaining COVID-19 safety measures throughout the PHE. Safety measures included:

- Requiring masks.
- Social distancing.
- Checking temperatures.
- Requiring COVID-19 tests prior to entering residential treatment.
- Extra cleaning and sanitization.
- Moving to telehealth delivery.

Precautionary measures resulted in mixed impact to service delivery and patient experience. Social distancing resulted in decreased capacity due to limits on how many individuals could be in an area or building at one time. As such, patients experienced delays to receive the necessary care. The requirement for a negative COVID-19 test became a barrier to care as patients waited for test results to arrive and were unable to receive care if they tested positive. One provider highlighted that patients were generally understanding and appreciative of the precautionary safety measures.

The shift of care delivery from in-person to telehealth received mixed reviews. Several providers shared that patient care was negatively impacted. One provider noted that patients in 12-step programs who shifted to a virtual setting received less support upon exit from the program than they would have in-person. A second provider cited a lack of accountability for patients receiving telehealth services; during their temporary residential treatment shutdown in 2020 when telehealth was used, the provider experienced an unprecedented number of patients not attending appointments. A third provider highlighted the monetary costs incurred by adding proper security measures to video conferencing platforms for healthcare utilization. Other providers shared that telehealth was a benefit to their practice. For several, their first experience using telehealth to deliver care occurred during the COVID-19 PHE. Providers noted that telehealth made the care experience easier for patients.

Providers shared the negative financial impact they experienced due to the PHE, beginning with the reduction of income due to shutdowns. Additionally, providers experienced changes in normal funding streams due to disruptions in flow, fundraising, and budgets. Several providers noted the weight of additional expenses including money spent on cleaning and sanitization.

Experiences with COVID-19 shared by individual providers included the following:

- The State did an impressive job with its response to the COVID-19 PHE.
- Low-income patients experienced a greater barrier to care from the PHE.
- Patients were more focused on their treatment due to a lack of other activities.
- Community support within one provider's region was high.

- The demand for residential services decreased as referring providers kept their patients at the OP level and few people in rural areas sought care.
- Residential family units were able to remain fully occupied and staffed as they did not need to drop to 50 percent capacity for social distancing.
- Mental health issues and substance use increased during the PHE.